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CORPUS BASILICARUM CHRISTIANARUM ROMAE

THE EARLY CHRISTIAN BASILICAS OF ROME
(IV - IX Cent.)

BY

RICHARD KRAUTHEIMER SPENCER CORBETT
ALFRED K. FRAZER

VOL. V

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Art Bull.	*The Art Bulletin... published by the College Art Association of America.*
Atti Pont. Accad.	*Atti della Pontificia Accademia Romana di Archeologia.*
B.A.C.	*Bulletino di Archeologia Cristiana.*
Boll. d'arte.	*Bollettino d'arte.*
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B.Z.	*Byzantinische Zeitschrift.*
Cah. Arch.	*Cahiers Archéologiques.*
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Diss. Pont. Accad.	*Dissertazioni della Pontificia Accademia Romana di Archeologia.*
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Mon. Accad. Lincei.	*Monumenti Antichi pubblicati per cura della R. Accademia dei Lincei.*
N.B.A.C.	*Nuovo Bullettino di Archeologia Cristiana.*
Not. sc.	*Notizie degli scavi di antichità. R. Accademia dei Lincei.*
P.B.S.R.	*Papers of the British School at Rome.*
RAC	*Rivista di Archeologia Cristiana.*
Rendic. Pont. Accad.	*Rendiconti della Pontificia Accademia Romana di Archeologia.*
Rev. Arch.	*Revue Archéologique.*
Röm. Mitt.	*Römische Mitteilungen des Deutschen Archäologischen Instituts.*
R.Q. Schr.	*Römische Quartalschrift.*

PREFACE

This, the fifth volume, terminates the series of the *Corpus Basilicarum Christianarum Romae*. It has been a long haul. Had I foreseen forty-five years ago the administrative and financial difficulties to be overcome, the scholary problems it would raise rather than solve, and its constant growth, I might never have begun it. As it is, this seems the moment to look back, to judge what has and what has not been achieved and to remember gratefully those, living and dead, whose help has made possible the completion of the work.

Envisaged as a small handbook, the *Corpus* was begun in the late '20's under the auspices of the Bibliotheca Hertziana, now the Max-Planck-Institut, but the first investigations of Rome's many Early Christian churches showed that the project would turn out to be much larger than expected. When in 1933 political events in Germany made it impossible for the Bibliotheca Hertziana to continue its sponsorship, Ernst Steinmann, then its Director — truly humane as he was — through Monsignor Josef Wilpert approached Monsignor J. P. Kirsch with the suggestion to continue the *Corpus* under the auspices of the Pontificio Istituto di Archeologia Cristiana. Having obtained permission from Pope Pius XI, that Institute began the publication of Volume I in 1937, in two editions, English and Italian. Volume I was completed slowly in 1956, financed in part through a bequest left by Monsignor Kirsch who died in 1941. The preparation and printing of the following volumes were made possible through three major grants, one provided by the American Philosophical Society for the excavation at S. Lorenzo f. l. m., 1948-1950; and two more, raised from 1956 on by Craig H. Smyth, then the Director of the Institute of Fine Arts, New York University from the Phyllis Lambert Architectural Research and Publication Fund established at the Institute, for Volumes II and III; and from the Jayne Wrightsman Professorship Fund, whose Chair I held at the Institute, for Volume IV. Hence, beginning with Volume II, the *Corpus* appeared under the joint imprint of the Institute of Fine Arts in New York and the Pontificio Istituto di Archeologia Cristiana in Rome, the latter continuing to publish the Italian edition. The printing of this last, fifth volume was made possible through diverting to it part of the Antonio Feltrinelli Prize, which the Accademia dei Lincei generously awarded me in 1974.

The long history of the project explains to some degree the differences between the various volumes. When working on the first volume, I was inexperienced and breaking new ground; the war years intervened; means were limited; and neither my observations nor the surveys of the buildings were always as thorough as they could have been, with the notable exceptions of the surveys of S. Agnese, S. Angelo in Pescheria, S. Crisogono, S. Ermete and S. Giovanni a Porta Latina. Beginning with Volume II, the *Corpus* was able to secure successively the help of three excellent collaborators, all experienced archaeological architects: Wolfgang Frankl, who had already contributed to the first volume; Spencer Corbett; and Alfred K. Frazer. It is impossible to separate their contributions and my own from one another. Each problem was discussed back and forth until a conclusion or a set of alternatives had been arrived at, acceptable to all concerned. My warm thanks go to all three of them for their help, patience and friendship. It is likewise a pleasure to remember Enrico Josi who throughout the preparation of these volumes extended a helpful hand by giving advice, opening doors and sharing with us his inexhaustible fund of knowledge, memories and experience.

Preparing the volumes for publication would have been impossible without the help of assistants, too numerous to list here. Their names appear, beginning with Volume III, at the beginning of each section. Nor is it possible any more to recall the many who in discussion furthered our work. Among them are a number of former students of mine, such as Ronald E. Malmstrom, who contributed valuably not only to the study of S. Giovanni in Laterano, where his name appears, but also to other churches. Similarly, John Herrmann gave advice for S. Paolo f. l. m. and S. Vitale. My warmest thanks go to all of them, named and unnamed. Likewise, I am sincerely grateful to the libraries and their staffs whose resources enabled us to prepare and complete the work: in the first place, the Biblioteca Vaticana; the Bibliotheca Hertziana; the Library of the American Academy in Rome; the Istituto di Archeologia e Storia dell'Arte, Palazzo Venezia in Rome; the German Archaeological Institute in Rome; the Avery Library at Columbia University; and the Library of the Institute of Fine Arts, the latter two in New York.

A few words must be added regarding this last volume in particular. Since the three major basilicas discussed have so much in common, we dispense with a section Historical Position attached to each of the three churches. Instead, we have summed up their common features in a section Historical Position at the end of the volume. Likewise, with regard to this last volume, we want to offer our special thanks to Ingegnere Francesco Vacchini of the Reverenda Fabbrica di S. Pietro, who placed at our disposal the staff of the Fabbrica on numerous visits to the excavations under St. Peter's, and the resources of its Photographic Archives; for S. Giovanni in Laterano, aside from Enrico Josi, thanks are due to Filippo Magi who gave permission to visit the excavations and to Mario Imperatore, foreman of the crew repairing the structure, who patiently guided us both through the excavations under the church and over the roofs.

As a result, both of this help and of the experience gained, Volumes II-V are, we trust, better prepared and better presented than the first. We know they are far from perfect. Nor are they the last word on the matter. New discoveries have been and will be made and will make it possible to revise our present observations and conclusions. Regarding the first volume, we ourselves might correct a number of points, based on our own observations or on those offered elsewhere. For the following volumes, likewise, the process of revision has set in. We leave such corrections to others. We take pleasure in having sparked new discussions on an old subject. Scholarship is a colloquium continued over the centuries. We have made our contribution and let it stand.

Richard Krautheimer

Rome,
Spring, 1976

S. GIOVANNI IN LATERANO

(R. Krautheimer, S. Corbett, with contributions by R. E. Malmstrom)

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B. ANCIENT DESCRIPTIONS AND ILLUSTRATIONS

I. ANCIENT DESCRIPTIONS

A. *Until* 1645

Descriptio Ecclesiae Lateranensis (John the Deacon) 1159-1181, based on earlier versions, *ca.* 1070, prior to 1118 and 1151-1159 and with some later additions (LAUER, 391 ff.; MIGNE, *PL*, 194, cols. 1543-60; VALENTINI-ZUCCHETTI, *Cod. Topografico*, III, 319 ff.).

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B. *After* 1645

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ANONYMOUS, *Relazione dello stato nel quale si trovava la Basilica Lateranense quando papa Innocenzo X s'accinse a rinovarla dalla Porta Maggiore verso oriente sino alla nave traversa de Clemente VIII*, Arch. Lat. F. F. XXIII, 12 (LAUER, 385 ff.).

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II. ANCIENT ILLUSTRATIONS.

a) *Plans and Surveys*

1. *Prior to* 1644.

1551 BUFALINI, plan of basilica and palace, map of Rome, woodcut (ed. Ehrle, Rome, 1911; FRUTAZ, *Piante*, pls. 189-209).

ca. 1575(?) ANONYMOUS, plan of basilica and palace complex, engraving; Rome, Lateran Archives, unnumbered (tracings ROHAULT DE FLEURY, *Latran*, pl. V; LAUER, 311, fig. 116a; our fig. 56).

After 1589 FRANCESCO CONTINI, plan of Lateran complex with palace of Sixtus V begun, engraving (first published, SEVERANO, *Sette Chiese* I, opposite 560; ROHAULT DE FLEURY, *Latran*, pl. VI).

2. 1644—51 *Borromini Project.*

(i) Plans.

BORROMINI, plan of old basilica, ambulatory of apse omitted, scale in *palmi* at the bottom, pencil; Vienna, Albertina IT AZ 374 (*RAC*, 1967, 135, fig. 6; our fig. 57).

CARLO RAINALDI, survey of basilica and adjacent buildings, pen and watercolor; Vienna, Albertina IT AZ 373 (EGGER, *Wickhoff*, pl. V and p. 155, describing also the color coding of the drawing; HEMPEL, *Borromini*, 96, fig. 24; our fig. 58).

BORROMINI WORKSHOP (?), survey of basilica and adjacent buildings, pencil; Vienna, Albertina IT AZ 373a (EGGER, *Wickhoff*, 155, mentioned as one of two Albertina drawings after the Rainaldi plan; J. Connors, in oral communication, believes the lower right corner may be by Borromini).

BORROMINI, sketch of palace and two north aisles with measurements of lengths, widths, heights, «*Nave minore lunga pm 332....Alta pm 40½* (width given as 26¼) ...*Nave mezzana pm 332... Alta pm 57* (width given as 30⅓). *Nave principale della Chiesa Laterana lunga pm 332*», pencil; Vat. lat. 11257, fol. 248 (EHRLE, «Dalle carte e dai disegni di Virgilio Spada», *Atti Pont. Accad., Memorie*, II, 1928, 14, listed; PORTOGHESI, *Saggi*, fig. 27; THELEN, *F. Borromini - Mostra di disegni e documenti vaticani*, Biblioteca Apostolica Vaticana, October 1967, 35 ff., transcribes measurements; our fig. 61).

BORROMINI WORKSHOP, plan of basilica with apse and remnants of aisle columns and new nave project, new additions hatched against stippling of old walls, pencil with ink labels of statues; Vat. lat. 11257, fol. 258r (EHRLE, *op. cit.*, 14, listed; PORTOGHESI, *Saggi*, fig. 30, mislabelled as from Vat. lat. 11258; our fig. 59).

BORROMINI WORKSHOP, survey of basilica and adjacent structures, showing ambulatory, old structure in red and new nave proposal in blue, scale in lower left, pencil, colored wash and ink; Vat. lat. 11258, fol. 142 (EHRLE, *op. cit.*, 15, listed; THELEN, *Mostra*, *op. cit.*, 29; our fig. 60).

BORROMINI WORKSHOP, survey of basilica omitting ambulatory, scaled and showing in hatched areas an alternative arrangement for nave piers, old walls stippled, pencil; Vat. lat. 11258, fol. 146 (EHRLE, *op. cit.*, 15, listed; HEMPEL, *Borromini*, 102, fig. 29).

BORROMINI WORKSHOP, plan of basilica omitting ambulatory, scaled, giving two variants for nave and aisle piers, hatched new structure, stippled old walls, pencil; Vat. lat. 11258, fol. 148 (EHRLE, *op. cit.*, 15, listed; PORTOGHESI, *Saggi*, 28, fig. 28).

ii) Sections and elevations.

BORROMINI WORKSHOP (?) longitudinal elevation of arcade dividing north aisles, seen from outer aisle, scale at bottom, pencil; Vienna, Albertina IT AZ X21 (EGGER, *Wickhoff*, 158, mentioned; *RAC*, 1967, 137, fig. 8; J. Connors orally attributes the drawing to Borromini; our fig. 69).

BORROMINI OR WORKSHOP, cross section of the north aisles, pencil; Vienna, Albertina IT AZ 381 (EGGER, *Wickhoff*, 158, described; HEMPEL, *Borromini*, 98, fig. 26; J. Connors in oral communication believes this to be autograph Borromini; our fig. 68).

BORROMINI OR WORKSHOP, measured elevation of north wall, pencil; Vienna, Albertina IT AZ 387 (*RAC*, 1967, 133, note 12, briefly described; J. Connors in oral communication believes this to be autograph Borromini; our fig. 67a).

BORROMINI AND WORKSHOP, elevation of north wall of nave, the last three western bays, scale at bottom, pen and ink, perhaps over pencil; Berlin, Staatl. Museen, Kunstbibliothek, Hdz. 4467 (CASSIRER, «Zu Borrominis Umbau der Lateransbasilika», *Jahrbuch der Preussischen Kunstsammlungen*, XLII, 1921, facing p. 64, scale not included; our fig. 63).

BORROMINI, section of basilica walls showing Borromini's facing over old walls, pencil, pen, ink and wash; Vienna, Albertina IT AZ 380 (PORTOGHESI, *Disegni*, 21, no. 58, described; J. Connors in oral communication believes this to be autograph Borromini; our figs. 66a, b).

BORROMINI, measured elevation of façade showing relieving arches beneath wall facing, pencil; Vienna, Albertina IT AZ 385 (EGGER, *Wickhoff*, 158, fig. 2; J. Connors communicates orally that this is autograph Borromini; our fig. 64).

BORROMINI OR WORKSHOP, elevation of façade and Sixtus V's unfinished palace, pencil; Vienna, Albertina IT AZ 386 (EGGER, *Wickhoff*, 154, fig. 1; J. Connors communicates orally that this is autograph Borromini; our fig. 65).

3. *After 1651*

ca. 1670 CIRO FERRI, longitudinal section of nave as redecorated by Borromini, including section of apse and ambulatory, part of ambulatory cut at left side of drawing, pen and wash; Florence, Uffizi, UA 3646.

1683 G. G. DE ROSSI, plan of basilica with indication of ambulatory vaulting system, engraving; Rome, Palazzo Venezia, Raccolta Lanciani 31350, with inked in measurements in transept, apse, ambulatory, and transept portico; (J.J. DE RUBEIS, *Insignium Romae Templorum*, Rome, 1683, no plate number; this version was originally numbered 13, evidently there are various editions).

1693 CIAMPINI, façade, before Galilei, engraving (CIAMPINI, *De Sacris Aedificiis*, pl. I; ROHAULT DE FLEURY, *Latran*, pl. IX; LAUER, 179, fig. 70; our fig. 4).

——————, ground plan after Contini (above, after 1589) engraving (CIAMPINI, *op. cit.*, pl. III).

ca. 1700 MARCHETTI (?), measured survey of post Borromini basilica with old apse and ambulatory, pencil and ink; Windsor Castle, Royal Library, 10960 (like the following six tentatively attributed to Marchetti by KRAUTHEIMER, «La façade de St. Jean-de-Latran à Rome», *Rev. Arch.* 6e serie, V, 1935, 231).

——————, labelled plan of chancel with choir stalls, pencil; Windsor Castle, Royal Library, 10968.

——————, elevation of southwest transept wall with view into apse, side view of Altar of the Holy Sacrament, pencil and ink; Windsor Castle, Royal Library, 10969.

——————, elevation of south side of «Leonine portico» with entrance to sacristy and triangular chambers, pen and ink; Windsor Castle, Royal Library, 10986.

——————, façade plan, measured, pen and ink; Windsor Castle, Royal Library, 11005, (KRAUTHEIMER, *op. cit.*, *Rev. Arch.*, 1935, 234, fig. 3).

1725 CARLO FONTANA, plan of portico and façade, with seating for opening of *Porta Santa*; Vat. lat. 9314, fol. 626.

1831 CAPPARONI, ground plan and apse mosaic, engraving; (CAPPARONI, *Le principali quattro basiliche di Roma*, fasc. I, Rome, 1831, pls. 1 and 10).

1832 GERARDI, plan and apse mosaic of Nicholas IV with inscription, lithograph (VALENTINI and GERARDI, *La patriarcale basilica Lateranense*, Rome, 1832, I, pl. II).

1838 GIACOMO FONTANA, longitudinal section of basilica, including section of apse and ambulatory, and ground plan, lithographs (FONTANA, *Chiese di Roma*, III, pls. I and IV).

1843 CANINA, plan of west end showing apse, ambulatory and adjacent structures, project for adding rooms west of ambulatory, signed and dated, pen and wash; Lateran Archive, unnumbered.

——————, reconstructions of plan with apse and ambulatory (pl. LXIX), of façade (pl. LXX), of longitudinal and transverse sections of nave elevation (pl. LXXI), of apse with semi-dome and window zone (pl. LXXII), and of nave interior (pl. LXXIII), engravings, the last a lithograph (CANINA, *Tempi Cristiani*). All reconstructions are highly arbitrary.

1856 ROHAULT DE FLEURY, plan of Lateran complex, reconstruction with old apse and ambulatory, engraving (ROHAULT DE FLEURY, *Latran*, pl. III). All reconstructions are highly arbitrary.

1873–6 STEVENSON and CORVISIERI, plan of excavations of apse and surroundings (LAUER, 10, fig. 2).

1876 BUSIRI-VICI, excavation of apse, plan and details (LAUER, pl. II).

1876–80 VESPIGNANI *et al.*, surveys in the Lanciani Collection, Palazzo Venezia, include: the old apse superimposed upon the foundations for the new, pen and wash (no. 31335), probably Vespignani; Vespignani, the old apse, the new and adjacent structures, signed and dated May 13, 1877, pen and wash (no. 31345); Vespignani, *ca.* 1880, plan in black with new structure in color, pen and wash (no. 31347); Vespignani, mosaic pavement, labelled «*Scavi Saverelli al Laterano...*», part illegible, pencil (no. 31352; our figs. 12; 62a, b).

BUSIRI-VICI, apse and ambulatory plan with details of architecture and mosaic inscription, lithograph; photograph, Palazzo Venezia, Lanciani Collection, no. 31387.

1877 ROHAULT DE FLEURY, reconstructions of groundplan of basilica, medieval palace and cloister (pl. IV), of façade (pl. VIII), of longitudinal over-all section with atrium (pl. XVI), and of transept, apse and ambulatory (pl. XVII), of interior elevation of apse (pl. XVIII) and of exterior elevation of apse, ambulatory and transept (pl. XIV), and surveys of architectural details of apse and transept (pl. XIV), lithographs (ROHAULT DE FLEURY, *Latran*). All reconstructions are highly arbitrary.

1886 BUSIRI-VICI, exterior elevation of old apse, plan of apse with mosaic and architectural details, labelled «*Il Laterano nel* 1870», lithograph; Rome, Palazzo Venezia, Lanciani Collection, no. 31388.

b) *details*

1488—94 Giuliano da Sangallo, cornice, labelled «*A. SCO. IANI L.*», pen and ink; Vat. Barb. lat. 4424, fol. 11v (Huelsen, *Il libro di Giuliano da Sangallo*, Leipzig, 1910, pl. 11v, text 21). Ashby, «Drawings attributed to Andreas Coner», *P. B. S. R.*, 2, 1904, 51, and Huelsen identify this cornice with that reproduced in Codex Coner, 80v, from *ca.* 1550, but the cornice has not been located.

ca. 1500 Fra Giocondo, measured base, labelled «*s. jovene laterano*», pen and ink; Florence, Uffizi, UA 1534v (Bartoli, *Mon. Ant.*, I, no. XXVI, fig. 53; VI, 13).

ca. 1515 Anonymous, composite capital, labelled «*ad s. ioanje in laterano*», unidentified, pen and ink; London, Soane Museum, Codex Coner, II, fol. 23v (Ashby, *op. cit.*, 72, pl. 151b).

ca. 1515 Anonymous, base of a column, measured and labelled «*colune metalli.in.s.iovane. in laterano*», pen and ink; London, Soane Museum, Codex Coner, II, fol. 17 (Ashby, *op. cit.*, 66 f., pl. 134e). Ashby identifies it with the bronze columns, repaired and moved to the Altar of the Sacrament in the transept under Clement VIII.

ca. 1550 Anonymous, cornice labelled «*In S. Gio. Lat.*», pen and ink; London, Soane Museum, Codex Coner, II, fol. 80v (Ashby, *op. cit.*, 51, pl. 80v, b). This same cornice appeared in Giuliano da Sangallo's notebook, see above, 1488-94.

ca. 1550 Anonymous, composite capital labelled «*A San Gio. Laterano*», pen and ink; London, Soane Museum, Codex Coner, II, fol. 23 (Ashby, *op. cit.*, 72, pl. 151d). Ashby notes that this is an addition by a later hand to the sheet of capital studies cited, *ca.* 1515.

ca. 1700 Marchetti (?), *bifora* window from ambulatory, labelled as before the Altar of the Sacrament, pencil and ink; Windsor Castle, Royal Library, 10975.

——————, *bifora* window from ambulatory, labelled as in front of doors, pen and ink; Windsor Castle, Royal Library, 10976.

1934—8 Pont. Comm. di Arch. Sacra, remains of Constantinian *solea*, between third and fourth Borromini piers, facing east, photograph; Pont. Comm. di Arch. Sacra, nos. 012570 and C 18 (our figs. 50, 51[1]).

——————, nave foundation south, between fourth and fifth Borromini pier from façade (St. John the Evangelist and St. Andrew), seen from the north, photograph; Pont. Comm. di Arch. Sacra, no. 012541 (our fig. 31).

——————, nave foundation, north, between fourth and fifth Borromini piers from façade, photograph; Pont. Comm. di Arch. Sacra, no. 012542 (our fig. 30).

——————, north foundation wall of nave below third main pier, from north, as identified by Malmstrom, photograph; Pont. Comm. di Arch. Sacra, no. 012135 (*RAC*, 1967, 131, fig. 4; our fig. 32).

——————, between first and second main pier of Borromini's nave, looking south, photograph; Pont. Comm. di Arch. Sacra, no. 012133 (our fig. 33).

——————, foundation wall, dividing arcade between north aisles, from south, between fourth and fifth Borromini aisle piers, corresponding to third main pier, as identified by Malmstrom, photograph; Pont. Comm. di Arch. Sacra, no. 012134 (our fig. 34).

——————, foundation wall dividing arcade of north aisles, from south, between the second and third Borromini aisle piers, the bay between the first and second nave piers, photograph; Pont. Comm. di Arch. Sacra, no. 012132 (our fig. 35).

——————, marble dado, now in cloister, photograph; Pont. Comm. di Arch. Sacra, no. 12339 (Josi, *Scoperte*, 6, fig. 4).

——————, remains of brick pier, possibly from clerestory wall, no longer to be found, photograph; Pont. Comm. di Arch. Sacra, no. 12568 (our fig. 55).

——————, pavement of Constantinian basilica north of entrance to open *confessio*, photograph; Pont. Comm. di Arch. Sacra, no. 012460 (our fig. 49).

——————, views of impost block from arcade dividing south aisles, as of 1934, photographs; Pont. Comm. di Arch. Sacra, nos. 12337 (front), 12397 (back), 12338 (bottom), (Josi, *RAC*, 1934, 338, fig. 2, front view; *RAC*, 1957, 83, fig. 4, back view; our figs. 52, 54).

[1] We count the diagonal piers flanking the main portal as piers number one.

c) *views*

1. *Before* 1651

ca. 1280 Cimabue, schematic exterior view, showing arcaded narthex, clerestory and façade, the latter with figures (from apse mosaic?) and campanile right-hand near façade, mural; view of Rome, Assisi, S. Francesco, upper church, crossing (Frutaz, *Piante*, I, 113 f., no. LXX, and II, pl. 141; Battisti, *Cimabue*, Milano, 1963, colour plate 9)[1].

ca. 1300 Giotto Follower, façade with trabeated portico and campanile, right-hand, mural; Saint Francis supporting the Church, Assisi, S. Francesco, upper church, nave (Rohault de Fleury, *Latran*, pl. IX, fig. 2; Cicognani *et al.*, *Giotto e i Giotteschi in Assisi*, Rome, 1969, fig. 50, colour detail pl. VII). A copy in the Louvre, Paris, shows the upper façade and other details now lost in the Assisi fresco, tempera, Paris, Louvre (Rohault de Fleury, *Latran*, pl. IX, fig. 1; Armando Schiavo, «Vicende della Cattedrale di Roma e del Patriarchio Lateranense», *Studi Romani*, 17, 1969, pl. IX; Smart, *The Assisi Problem and the Art of Giotto...*, Oxford, 1971, 31f.).

ca. 1323 Fra Paolino da Venezia, abbreviated exterior view, showing façade and campanile, right-hand, illumination; map of Rome, *Compendium* (*Chronologia Magna*), Venice, Marciana, Zan. 399, f. 98, and Rome, Vat. lat. 1960, fol. 270v (Frutaz, *Piante*, I, 115 ff., no. LXII and II, pls. 143, 145; Degenhart and Schmitt, «Mariano Sanudo und Paolino Veneto», *Röm. Jbch*, 14, 1973, 1 ff., esp. 86 ff., regarding the early date 1323). Possibly based on XIII century prototype (Holtzmann, «Der älteste mittelalterliche Stadtplan von Rom», *J.D.A.I.*, 41, 1929, 56 ff.).

1328 Anonymous, schematic exterior view, showing portico, façade and clerestory, with three and more windows respectively, but no campanile, golden seal, lower left; bull of Louis the Bavarian, Munich State Archives and elsewhere (De Rossi, *Piante icnografiche*, pl. III, and 87 ff.; Frutaz, *Piante*, I, 119 f., no. LXXXIII, and II, pl. 144).

1411—16 Limbourg Brothers, abbreviated exterior, showing portico, high inner (?) aisles, façade with three windows, clerestory with plus five windows, campanile right-hand near façade, illumination; map of Rome, upper right, *Très riches heures du Duc de Berry*, Chantilly, Musée Condé, ms. 65, fol. 141v (Frutaz, *Piante*, I, 123 f., no. LXXVI, and II, pl. 148).

1414 Taddeo di Bartolo, schematic exterior, showing arcaded portico, aisles, façade with three windows, clerestory with plus five windows, and campanile, right-hand far back, mural; map of Rome, Siena, Palazzo Pubblico, chapel (Frutaz, *Piante*, I, 125 f., no. LXXVII, and II, pl. 149). Perhaps based on a prototype antedating 1348[2].

1474 Alessandro Strozzi, far distant sketch, showing baptistery, *Scala Santa*, *Sancta Sanctorum*, palace and basilica with nave and transept, the latter with but one tower, pen and ink; map of Rome, upper left, Florence, Laurenziana, cod. Redi 77, fol. VIIv, VIIIr (De Rossi, *Piante icnografiche*, 99 ff., pl. IV; Frutaz, *Piante*, I, 140 ff., no. LXXXIX, and II, pl. 159). Dependent on it, view in late map of Pietro del Massaio (Frutaz, *Piante*, I, 142 f., no. XC, and II, pl. 160)[3].

[1] We omit pure building symbols, as used by Matthew Paris and the Ebstorf map (Frutaz, *Piante*, I, 111 ff., nos. LXVIII, LXIX; II, pl. 140).

[2] We omit presentations which compress into one building the basilica, baptistery and palace, as found in the Dittamondo ms. of 1447 (Frutaz, *Piante*, I, 129 f., no. LXXXI, and II, pl. 153), or in the maps of Pietro del Massaio of 1469 and 1471 (*ibid.*, I, 137 ff., nos. LXXXVII, LXXXVIII, and II, pls. 157, 158).

[3] A medal, coined for Martin V, shows a church façade, preceded by a double-tiered loggia. Ever since it was published by Ciampini (Ciampini, *De sacris Aedificiis*, 10), it has been identified as the Lateran façade. If this were so, it could only have been a project; but the inscriptions "*DIRUTAS AC LABENTES URBIS RESTAUR. ECCLES*" and "*COLUMNAE HUIUS FIRMA PETRA*" are too general to establish a firm link with the Lateran. In fact, the double-loggia narthex strongly recalls the façade of the Colonna church of SS. Apostoli, built only in 1475 by Giuliano della Rovere, later Julius II; did he only carry out a project made fifty years before? (See Claude du Molinet, *Historia summorum pontificum a Martino V ad Innocentium XI per eorum numismata*, Paris, 1679, 1, fig. III and 2, where he leaves open the identification between the Vatican portico, the Lateran and SS. Apostoli. This licaubption was kindly communicated to us by V. Hoffmann).

1532—6 HEEMSKERCK, view of the Lateran palace and basilica from the north, pen and brown wash; Berlin Kupferstichkabinett, 79D, fol. 12r and 71 (HUELSEN and EGGER, *Heemskerck*, pls. 12r and 71, pp. 8, 36 ff.). Huelsen and Egger deduced that the two pages were once joined, as evidenced by the continuous roofline of the palace corridor (our fig. 2).

1532—6 HEEMSKERCK, view from ambulatory across north transept into north aisles, pen and wash; Berlin Kupferstichkabinett, 79D, fol. 70v (HUELSEN and EGGER, *Heemskerck*, I, pl. 70v, p. 36, wrongly identified as Sto. Stefano Rotondo; correct identification, MALMSTROM, «A drawing of Marten van Heemskerck of the interior of S. Giovanni in Laterano», *Röm. Jbch*, 14, 1973, 247 ff.; our fig. 75).

ca. 1550 SALLUSTIO PERUZZI, view of Lateran from back and high up, showing apse, transept and side view of north transept façade, pen and ink; Florence, UA 1423 (LAUER, 303, fig. 110).

1575 DUPÉRAC-LAFRÉRY, view of basilica from north, high vantage point, engraving; *Le sette Chiese* (FRUTAZ, *Piante*, pl. 236; our fig. 70).

1577 DUPÉRAC-LAFRÉRY, bird's eye view of basilica, engraving; map of Rome, ed. Ehrle, Rome, 1908 (LAUER, 319, fig. 120; FRUTAZ, *Piante*, II, pl. 252; our fig. 72).

1588—90 ANONYMOUS, view from north, showing apse, clerestory of nave, old palace, fresco; Vatican City, Biblioteca Vaticana (STEVENSON, *Topografia e monumenti di Roma nelle pitture a fresco di Sisto V della Biblioteca Vaticana*, Rome, 1887, pl. IVb; ROHAULT DE FLEURY, *Latran*, pl. XII, without procession; LAUER, pls. XXIX-XXX; our fig. 71).

1588—90 ANONYMOUS, view of new palace, new north transept façade, with old apse, mural; Vatican City, Biblioteca Vaticana; bibliography as above.

late XVI century PETRUS LAURUS, reconstruction of basilica from north, showing old transept façade and adjacent buildings, engraving (ROHAULT DE FLEURY, *Latran*, pl. XII; LAUER, 304, fig. 111)[1].

ca. 1600 CIRCLE OF LIGOZZI, preaching of S. Angiolo, showing interior of main apse with four bronze columns, mural; Florence, formerly church of Ognissanti, cloister, now in restoration (?), (ROZZOLI, *La Chiesa d'Ognissanti in Firenze*, Florence, 1898, 95 f.; BACCI, «Jacopo Ligozzi nella pittura fiorentina», *Proporzione*, 3, 1963, 62 ff., 80, notes 36 f.; our fig. 76).

after 1600 BATTISTA PANZERA, variant of Ognissanti fresco, engraving (ROHAULT DE FLEURY, *Latran*, pl. XIX, 11, upper half only; LAUER, 305, fig. 112, as from Lateran Archive. Both authors erroneously date it 1508).

after 1602 JACOPO GRIMALDI, view of basilica and palace, variant of Sixtus V fresco in Vatican, brush and ink; Milan Biblioteca Ambrosiana, F inf. 227, ff. 8-9 (GENGARO, «Da alcuni codici di Jacopo Grimaldi nella Biblioteca Ambrosiana», *Le Arti*, I, 1939, 596 ff., pl. CLXXXIII, fig. 3).

ca. 1630 ANONYMOUS, medallion showing façade of Lateran, mural; Rome, Lateran Baptistery (kindly communicated by V. Hoffmann; our fig. 74).

ca. 1640(?) LOUIS ROUHIER, view of north transept façade and old palace, engraving (RASPONI, following p. 386).

before 1646 GASPARD DUGHET, view from east, showing east wing of palace and church, with portico and old façade with three blind (or blocked) arches in upper part, transept and north towers, oil on canvas; Chatsworth, Collection Duke of Devonshire, no. 154 (LAUER, pl. XXXI; our fig. 73).

after 1650 FOLLOWER OF GASPARD DUGHET, View of Lateran from east, free variant of proceding, with Borromini rear wall covering old façade and with addition of Romanesque campanile and omission of north towers, oil on canvas; Chatsworth, Collection of Duke of Devonshire, no. 159 (EGGER, *Veduten*, 1932, pl. 90).

1651 FILIPPO GAGLIARDI, reconstruction of interior, mural; Rome, San Martino ai Monti (DOULCET, «Note sur une fresque de Saint-Martin-des-Monts», *Mél. Ec. franç.*, V, 1885, 377 ff.; THELEN, «Zur barocken Umgestaltung des Langhauses der Lateran-Basilika», *Kunstchronik*, 7, Sept. 1954, 264, identifying it as an idealised reconstruction; HARRIS, «The decoration of San Martino ai Monti», *Burlington Magazine*, 106, 1964, 118, publishing the payment to Gagliardi; our fig. 77).

[1] The relation between the Vatican Library mural, 1588-90, the Grimaldi drawing, after 1600, the P. Laurus engraving and that of Louis Rouhier wants further clarification. In any event, the latter three would seem to have been done after Sixtus V, *ex post facto*.

2. *After* 1651

1688 VERGELLI, view of basilica from east with old façade, engraving (VERGELLI, *Nuovo Splendore di Roma Moderna*, III, pl. 36).

ca. 1700 VAN LINT (formerly ANONYMOUS PACETTI)[1], view of façade of Lateran before Galilei, pencil; Berlin, Kupferstichkabinett, no. 6277 (CASSIRER, «Die Handzeichnungsammlung Pacetti», *Jahrbuch der Preussischen Kunstsammlungen*, XLIII, 1922, 70, fig. 7).

1784—9 GAUFFIER, view of apse and transept from northwest[2], pen and wash; private collection (PARISET, «Dessins de voyage des artistes français en Italie dans la seconde partie du XVIIIe siècle», *GBA*, series 6, vol. 54, 1959, 117 ff., esp. 128, note 9, fig. 12), kindly brought to our attention by Professor R. Malmstrom.

ca. 1818 ROSSINI, view of Lateran apse from southwest, showing ambulatory and part of apse exterior, and northwest transept wall with its buttresses, engraving (ROSSINI, *I monumenti più interessanti di Roma dal decimo secolo sino al secolo decimottavo*, Rome, 1818, but drawn earlier, fol. 16).

1820—2 PROSPER BARBOT, view of apse and transept, signed «1822» (?), pencil; Paris, Louvre, Cab. des Dessins, no. 26685.

1823 VERVLOET, view of apse and ambulatory, signed and dated, pencil; Rome, Gab. Naz. delle Stampe.

1830—41 DE VICO, view of rear of basilica from southwest, showing ambulatory, watercolour; Rome, Gab. Naz. delle Stampe, (our fig. 10b).

1860 PIETROSI (?), view of apse from southwest, signed and dated, watercolour; location unknown.

ca. 1870 PARKER, old apse from northwest, photograph; Rome, Palazzo Venezia, Raccolta Lanciani, no. 31336.

ca. 1870 ANONYMOUS, old apse from southwest, photograph; Lateran Archives.

8 August 1876 PARKER, excavations behind apse, photograph; Rome, Palazzo Venezia, Raccolta Lanciani, (LAUER, pl. I; our fig. 10a).

ca. 1877 ANONYMOUS, interior of apse, photograph.

ca. 1877 ANONYMOUS, old apse during rebuilding, and detail, photographs (LAUER, pls. I and III; our fig. 13).

C. DATES

197—203 Dedications in the *Castra Equitum Singularium* found below the nave of the basilica on an Ionic capital. (JOSI, *RAC*, 1934, 347 ff., figs. 7,8).

297—298 Fragmentary inscriptions referring to Diocletian and Maximian found in excavations, 1934-8, inside the remains of the *Castra Equitum Singularium*. (FERRUA, «Nuove iscrizioni degli Equites Singulares», *Epigraphica*, XIII, 1951, 96-141, esp. 141; see, however, M. SPEIDEL, «Die Equites Singulares Augusti», *Antiquitas*, Reihe, I, vol. 11, 1965, 91f. and note 591, where the disappearance of the *equites* after the middle of the third century is postulated).

end of 312 (?) Constantine founds the Lateran basilica, subsequently called after him the *Basilica Constantiniana*, has it decorated and endows it with furnishings and landed property, «*...fecit Constantinus aug...Basilicam Constantinianam...*». Outstanding among the furnishings and decoration are: a *fastigium* of hammered silver, sheltering (or carrying?) in front the figure of the Saviour on a folding chair «*...in sella*», flanked by the apostles carrying crowns; at the back, facing the apse, the Saviour enthroned «*...in throno...*» and flanked by four angels carrying spears; inside the *fastigium* there was a golden vault and, suspended from it, a huge golden chandelier «*...cameram ex auro purissimo et farum ex auro...qui pendet sub fastidium...*»; the vault of the basilica's apse «*...cameram basilicam...*» was covered with gold foil «*...ex auro trimita...*»; finally, there were seven silver altars and altar vessels. Besides

[1] For the identification of the Anonymous Pacetti with Hendrik Frans van Lint, see ZWOLLO, "De Anonymous Pacetti oftewel Hendrik Frans van Lint," *Oud Holland*, 77 (1962), 40 ff.

[2] Views of the west end of the basilica from the late eighteenth century on are too frequent to be listed *in extenso*; we chose those most characteristic.

the decoration and furnishing of the chancel, and distinct from it, the nave and aisles were provided with lighting fixtures «*Ornamentum...in basilica...*» as follows: a golden chandelier «*...ante altare...*» — note the singular!; forty-five chandeliers and fifty candlesticks in the nave «*...in gremio basilicae...*»; another forty chandeliers in the right-hand or southern aisle and twenty-five in the left-hand or northern aisle; lastly, seven gilded candlesticks with inlaid figures of prophets placed in front of the altars «*...candelabra auricula numero VII ante altaria, cum ornatu ex argento interclusum sigillos prophetarum...*». The landed property donated, its income marked for the maintenance of the church and its services «*...in servitio luminum...*», is all located near Rome and in Campania [1] (*LP*, I, 172-4).

Nov. 9, 312 or 318 «*Quinto idus nov. Romae dedicatio basilicae Salvatoris*» (Cesare Baronio, *Martyrologium Romanum*, Venice, 1597, 505), referring either to its founding, in that case November, 312, or to its consecration, 318; these being the only years in the reign of Constantine and Sylvester when November 9 falls on Sunday, as customary for church dedications.

428—30 Dedicatory inscription of Flavius Felix and his wife Padusia, formerly in the apse, possibly referring to its redecoration: In lāt in throno / *FL. felix. UC. magister utriusque militiae / patricius. & cons. ord. & padusia eius. inl. femina / uoti cōpotes de Pprio fecerunt* (De Rossi, *Inscriptiones*, II, 1, 149, no. 17, from Laureshamensis Sylloge I; Diehl, *ILCV*, 68).

432—40 Valentinian III donates a silver *fastigium* weighing 2000 pounds to replace the Constantinian one taken by Alaric (*LP*, I, 233).

455—61 After the sack of the Vandals, «*...post cladem wandalicam...*», Leo I donates six *hydrias*, two each to the Lateran, S. Paolo and St. Peter's. He further provides a new decoration for the Lateran apse, «*Fecit vero cameram in basilica Constantiniana*», perhaps continuing the work started by Fl. Felix and his wife (*LP*, I, 239).

514—23 Pope Hormisdas donates a silver arch to go in front of the altar, «*...arcum argenteum ante altare...*», and sixteen lighting fixtures, *canthara*, whose location is not given (*LP*, I, 271).

ca. 635—42 The *Epitome de Locis Sanctorum* for the first time refers to the basilica under its three names, apparently then in popular use: «*Basilica constantiniana quae et Salvatoris ipse quoque et sci. Johannis dicitur*» (De Rossi, *Roma Sotterranea*, I, 143; Huelsen, *Chiese*, 3; on date, *Corpus* II, 11, note 2).

649—53 First official reference to the basilica as dedicated to the Saviour in formal accounts of the synod of bishops assembled by Martin I in 649 «*...in ecclesia Salvatoris, iuxta episcopio Lateranense...*» (*LP*, I, 336) and later in the account of Martin's abduction «*...ecclesia Salvatoris quae et Constantiniana...*» (*LP*, I, 338), and in a letter of Martin I as «*...ecclesia salvatoris nostri Jesu Christi, quae cognominatur Constantiniana...*» (Mansi, *Collectio*, X, col. 851). An appended account of his martyrdom, however, describes Martin as «*...traditus...Romae de Catholica ecclesia sancti Johannis...*» (Mansi, *Collectio*, X, col. 854).

772—95 Hadrian I restores the quadriporticus with its atria and fountains, «*...et basilicam Salvatoris...in ruinis posita una cum quadriporticis suis atriisque et fontes, a noviter...renovavit*» (*LP*, I 507). His minor gifts include a tapestry for the main door and fifty-seven tapestries to hang in various arches, «*...et per diversos arcos vela sirica...*» (*LP*, I, 500). He also gives a silver lamp (*LP*, I, 510), and three gold vessels to go before the altar entrance, «*...fecit ante vestibulum altaris gabatas aureas...*» (*LP*, I, 511). In a letter to Charlemagne in 791, Hadrian I refers to the basilica as formerly called Constantinian, «*...basilica salvatoris domini nostri Iesu Christi, quondam Constantiniana*» (*MGH*, *Epistolae Merowingici et Karolini Aevi* 3, Berlin, 1898, 15). Anastasius Bibliothecarius, commenting on the Second Nicaean Council (786), refers to nave murals with Old and New Testament scenes typologically arranged and believed to be Constantinian (Migne, *PL*, 129, col. 289).

795—816 Leo III repairs the apse mosaic, «*Verum etiam et in basilica Salvatoris...camera mire magnitudinis*» (*LP*, II, 2). He renovates the church and its quadriporticus, provides the apse windows with stained glass «*...fenestras de abside ex vitro diversis coloribus decoravit atque conclusit...*», and repairs the stucco gratings of other windows «*...et alias fenestras basilicae ex metallo gypsino reparavit*» (*LP*, II, 25). He renovates the altar and sets up its ciborium (*LP*, II, 8, 14). The ciborium had four pure silver columns; large and decorated with narrative reliefs, it stood inside a chancel enclosure of colonnettes and *cancelli*, «*...fecit...cyburium cum columnis suis IIII ex argento purissimo diversis depictum storiis cum cancellis et columnellis suis mire magnitudinis et pulchritudinis decoratum...*» (*LP*, II, 27). He also set up silver chancel doors «*... super rugas ante ingressum...*» (*LP*, II, 25). In the list of his major donations is included a crown to hang over the altar weighing twenty-three pounds, the costliest donation in the list (*LP*, II, 18).

[1] The Constantinian gifts of real estate listed for the Lateran Baptistery include not only land near Rome but also in Africa, Greece and nearby islands (*LP*, I, 173).

844—847 Sergius II enlarges and rearranges the chancel according to his own design, builds or installs a confessio below the altar; he also makes visible the doors, heretofore hidden, by building an arcade and has it decorated with paintings: «*Et aliud quidam opus ante fores huius venerandae ecclesiae valde optimum fecit, quia sacra pridem quae latebant populis limina summo studio omnibus manifesta constituit cum pulchri decoris ibidem arcos a fundamentis construxit; quos etiam variis picturis nitide decoravit*» (*LP*, II, 91).

855—91 Donations of textiles and vessels continue through the second half of the ninth century (*LP*, II, 144, 153, 166, 194).

896 An earthquake causes the nave of the basilica to collapse, «*...ab altare usque ad portas cecidit*»; at this time the basilica is called «*...ecclesia Lateranensis...*» (*LP*, II, 229).

898 Provision of wood for repairs underway is being hampered (Letter of John IX to Emperor, *MGH*, *Legum*, I, 564; Jaffé, *Reg. Pont. Rom.* I, 442; Mansi, *Collectio*, XVIII, col. 232).

904—11 The rebuilding is being completed by Sergius III: «*Hic basilicam sancti Iohannis, que apellatur Constantiniana...a solo reedificavit et diversis donis et ornamentis dotavit, sicut ex utraque parte parietum letteris exaratum usque hodie legi potest ante columpnas eneas quae sunt coram altari*» (*LP*, II, 236, the first *LP* record of the basilica as S. Giovanni; but the entry is late, witness the «*usque hodie*»). These inscriptions, mentioned by Benedict of Soracte (*Benedetto Monaco di S. Andrea del Soratte Chronicon*, ed. Zucchetti, *Fonti per la Storia d'Italia*, Roma, 1920, 154) were transcribed, the one listing the gifts to the church, in the *Descriptio Lateranensis Ecclesiae* (by John the Deacon, Lauer, 406; Migne, *PL*, vol. 194, col. 1558) the other in the Brevis Sylloge, appended after 1311 to the *Descriptio*, ms *Sessorianus*, 290 (De Rossi, *Inscriptiones*, II, 306). Another inscription above the door on the inner façade, was similarly transcribed «*... super ipsas fores ecclesiae scriptum fuit interius...*» (John the Deacon, Lauer, 401; Migne, *PL*, vol. 194, col. 1553; mentioned but not transcribed by Benedict of Soracte, *op. cit.*). Panvinio (*De praecipuis basilicis*, 110) gives the following epigram, supposedly in the apse «*...versiculis abside ex musivo depictis...*», but with no source mentioned, referring to the rebuilding and redecoration, «*Augustus Caesar totum quum duceret orbem / Condidit hanc aulam Silvestri chrismate sacram / Iamque salutifera lepra mundatus ab unda / Ecclesiae hic sedem construxit primus in orbem / Salvatori Deo qui cuncta salubriter egit / Custodemque loci pandit te sancte Ioannes / Inclinata ruit senio volventibus annis / Spes dum nulla foret vestigia prisca recondi / Sergius ad culmen perduxit tertius ima / Cespitq; ornavit pingens haec moena papa*».

955—64 Chapel of St. Thomas built in front of the two south aisles and decorated with murals. An inscription on the murals «iohes pp xii», or possibly «iohes pp xii cmlx», preserved in copies, names the donor John XII (Ladner, *Papstbildnisse*, I, 163ff.; Waetzoldt, *Kopien*, 36 f.).

1072 An inscription in the Lateran cloister is the only evidence of renovations executed under Alexander II:

> HOC FUIT INCEPTV̄ RENOVARI T̄EPORE T̄EPLV̄. VRBIS ALEXANDRI ROMANE PRE / SVLIS ALMI:. ANNVS ERAT CVIVS DVODENVS. ET IPSE SCDS̄ ANnVS MILLENV GEMINVS / TVNC SEPTUAGEN'... (Forcella, *Iscrizioni*, VIII, 10, no. 4; Silvagni, *Monumenta Epigraphica*, I, part 1, 1938, pl. XX, 2).

1115 (?) During the papacy of Paschal II lightning strikes the tower, the top of which, with its weathervane and bells, falls, ruining that corner of the basilica, «*...quassato angulo eiusdem basilicae sepulchrum papae quod erat inferius omnino destruxit*» (*LP*, II, 301 and 308, note 27).

1130—43 Innocent II repairs the roof (*LP*, *II*, Boson, 384), with beams provided by Roger of Sicily; he also repairs the damaged tower (John the Deacon, LAUER, 400; MIGNE, *PL*, 194, col. 1552).

1159—1181(?) Construction by Nicolaus Angeli of the portico (demolished in 1732) in front of the basilica, recorded in an inscription: «*Nicolaus Angeli fecit hoc opus*» (CIAMPINI, *De Sacris Aedificiis*, pl. I and p. 13; RASPONI, 34); an inscription on the frieze, «*Dogmate papali...*» is preserved in fragments in the cloister (JOSI, *Il chiostro Lateranense*, Vatican, 1970, 14, and SILVAGNI, *Monumenta epigraphica* I, part 2, 1943, no. 1493, pl. XLI, 5). The mosaic frieze with scenes from the legends of Constantine, Sylvester and others is now lost (WAETZOLDT, *Kopien*, 36).

1291 Nicholas IV builds transept and apse, repairs the façade and decorates the apse with the mosaic still preserved, albeit badly restored; recorded in the inscription in the apse mosaic: «*Partem posteriorem et anteriorem ruinosas / Huius sancti templi a fundamentis reedificari fecit / Et ornari. Ope mosaico Nicolaus PP IIII... Anno Dni M. CC. Nonagesi I...*» (FORCELLA, *Iscrizioni*, VIII, 143, no. 14; WAETZOLDT, *Kopien*, 37). Forcella notes that the mosaic also bore Torriti's signature. Likewise, two contemporary long mosaic inscriptions of similar content from 1291, formerly on the apse wall, are recorded (FORCELLA, *Iscrizioni*, VIII, 14 f., nos. 15 and 16).

June, 1308 A fire at the Lateran causes extensive damage: «*...s'apprece fuoco in Roma ne' Palagi Papali di San Giovanni Laterano, e arsono tutte le case de' Calonaci, e tutta la Chiesa, e circuito...*»; repairs made by Pope Clement, «*...e la detta chiesa fece ristorare, e rifare più bella, e ricca che non era prima*» (GIOVANNI VILLANI, *Storia*, Florence, 1587, Book VIII, Ch. XCVII, 372).

1341—6 Repairs continue, as witnessed by the accounts of Raymond, Bishop of Rieti, in particular on the roof at a cost of 80,000 florins, «*...Benedetto* (Benedict XII) *...fece fornire tutto lo tetto... lo quale fin a la metà...era discopierto...custao ostanta milla d'oro...*» (ROHAULT DE FLEURY, *Latran*, 483 f., quoting *Chronica di Rienzi*, MURATORI, *R.I.S.*, III, 277).

August, 1361 A new fire caused by carelessness in repairing the nave roof results in the destruction of the nave roof and chapels, «*...che nulla restò fuori che le mura...*» (MATTEO VILLANI, *Historia...li tre ultimi libri. Con un'aggiunta di...Filippo*, Florence, 1577, Book X, Ch. LXVIII), as well as in the collapse of three columns, «*...trabes omnes absumptae, tres columnae lapsae...altare et quattuor columnae ex jaspide labefactae...*»

ca. 1362—9 In a letter to Urban V, Petrarch bemoans the Lateran's standing roofless (PETRARCH, *Librorum Francisci Petrarche Annotatio*, Venice, 1501, II, *Senilium*, vii, ep. 1). Repairs, supervised by Giovanni di Stefano from Siena, were underway prior to 1369 (GAYE, *Carteggio*, I, 74-5; MUENTZ, «Nuovi documenti: Lavori d'arte fatti eseguire a Roma dai Papi d'Avignone», *Archivio Storico dell'Arte*, IV, 1891, 128), as confirmed also by a letter to Petrarch from Coluccio Salutati, April 3, 1369, (*Epistolario di Coluccio Salutati*, I, ed. NAVATI, *Fonti per la Storia d'Italia*, Rome, 1891, Book II, letter xi, p. 80). Five inscriptions from 1361-5 refer to the donation of five nave piers; two inscriptions are in the Museo Kircheriano; one, now lost, was in the Lateran Cloister, one is still in the cloister, one was once in the ambulatory behind the apse (ROHAULT DE FLEURY, *Latran*, 221 f., II, pl. XIX and p. 11; FORCELLA, *Iscrizioni*, VIII, 19 f., nos. 25, 27-9; LAUER, 261 and fig. 94. For the repairs, MALMSTROM, 1967).

1370—78 Gregory XI builds the north transept façade, presumably meaning the gothic portal. (PANVINIO-LAUER, 433; PANVINIO, *De praecipuis basilicis*, 114; UGONIO-LAUER, 522; UGONIO, *Stationi*, fol. 43r).

1411 The campanile and church struck by lightning, «*...percussit sagitta in campanile secundo in archo et columna ante civurium maioris altaris tertio supra portam maiorem...*» (ANTONIO DI PIETRO, *Diarium Romanum*, MURATORI, *R.I.S.*, ed Carducci and Fiorini, XXIV, v, 69; with misreadings, ROHAULT DE FLEURY, *Latran*, 493).

1417—31 Martin V has a new pavement laid in the nave, «*...pavimentum....navis medie...sumptuose valde fecit...lapidibus porphyreticis et serpentinis...navem de novo pretiosis figuris...pingi procuravit, sed morte praeventus complere opus non potuit...*» (*LP*, II, 522); and the murals in the nave are begun by Gentile da Fabriano (*LP*, II, 522; PLATINA, *Vite*, c. 351v; VASARI-MILANESI, III, 6; PANVINIO-LAUER, 433; PANVINIO, *De praecipuis basilicis*, 115, and Vat. lat. 6781, cc. 244v ff; MÜNTZ, *Les arts*, I, 16).

1431—47 Repairs and mural decoration by Pisanello continue under Eugene IV (MÜNTZ, *Les Arts*, I, 46-8; PLATINA, *Vite*, c. 367v); chancel (choir?) raised in 1446 (INFESSURA, 44) and (additional?) nave piers strengthened (PANVINIO-LAUER, 433; PANVINIO *De praecipuis basilicis*, 114-5; UGONIO-LAUER, 576).

1447—69 Unspecified work continues as reflected in payment documents (MÜNTZ, *Les arts*, I, 144, 200; II, 85 f.; MÜNTZ, «Les arts à la cour des papes», *Mél. Ec. Franç.*, IX, 1889, 160).

1491 Roof repairs and work on triumphal arch begun by Innocent VIII, financed by a fine exacted from Ascoli after a revolt, «*...et fertur poenam posuisse et reparationem tecti...videlicet in columnas et arcu ante apostolos...*» (INFESSURA, 268), but not completed «*...ibi praeparavit duas grossas columnas cum lapidibus marmoreis pro faciendo ibi arcu, quod morte praeventus non fecit*». (*Ibid.*, 280).

1492—1503 Campanile and church struck by lightning, 1493 (INFESSURA, 292). Alexander VI completes the triumphal arch, repairs the transept roof, the campanile, the sacristy and the ambulatory (BURCHARDUS, in: MURATORI, *R.I.S.*, XXXII, 1, 419; PANVINIO-LAUER, 433; PANVINIO, *De praecipuis basilicis*, 115; documents in MÜNTZ, *Les arts*, III, 205 and LAUER, 305 and note 5, 599-601). In 1500 Bramante painted Alexander's arms on the façade (VASARI-MILANESI, IV, 153-4).

1562—67 Pius IV repairs the transept façade, adding the attic between its two towers (PANVINIO, *De praecipuis basilicis*, 115; UGONIO-LAUER, 577; UGONIO, *Stationi*, fol. 43r). He also builds the coffered ceiling of the nave (UGONIO-LAUER, 576). Pius V continues his predecessor's projects (ROHAULT DE FLEURY, *Latran*, 519 f., documents 1562-66; LAUER, 602-11, documents of 1563-5).

1588 Sixtus V adds to the north transept façade a portico and *loggia di benedizione*, designed by Domenico Fontana (D. FONTANA, *Della trasportazione dell'obelisco...*, Rome, 1589; UGONIO, *Stationi*, 43r; documents LAUER, 613 f.; inscription 1586).

1592—1605 Clement VIII refurbishes the transept (SEVERANO, *Sette Chiese*, I, 523). The Altar of the Holy Sacrament with its bronze columns is constructed in the north transept (LAUER, 617 ff.).

1646—50 Under Innocent X, Borromini redesigns the building, reinforcing the old structure and remodelling the nave and aisles (RASPONI, 79 ff.); the basic structural work is completed at the end of 1647 (MARTINELLI, *Primo Trofeo della Sma. Croce*, Rome, 1655, 103).

1730—32 Galilei builds the eastern façade and benediction loggia (documents LAUER, 625-8; GALILEI, *Discorso sopra la facciata di San Giovanni in Laterano*, Archivio di Stato, Firenze, Carte Galilei, filza 14, published by GOLZIO, «La facciata di S. Giovanni in Laterano e l'architettura del Settecento», *Miscellanea Bibliothecae Hertzianae*, Munich, 1961, 460-3; JACOB, «Die Projekte Bibienas und Doris für die Fassade von S. Giovanni in Laterano», *Zeitschrift für Kunstgeschichte*, 1972, 100 ff.).

1876—86 The old apse is destroyed; Vespignani simplifies projects prepared by Busiri-Vici from 1870 on and builds the present long chancel and apse (BUSIRI-VICI, *Progetti...*, Roma, 1878; DE LAURIÈRE, «L'abside de Saint-Jean-de-Latran», *Bulletin Monumental*, 5 ser., vol. 7, 1879, 213-23; LOLLI, «La Basilica Lateranense e la nuova abside», *Rassegna Italiana*, V, 2, June 1886, 325-40; these are representative of the many articles published at this time).

1934—8 Josi excavates the nave of the basilica, uncovering the remains of the *Castra Equitum Singularium* (JOSI, *RAC*, 1934; *idem*, *Scoperte...*, Rome, 1934; unpublished report from 1937, *Lavori nel pavimento e sottosuolo dell'Arcibasilica Lateranense*, ed. Ufficio Tecnico Vaticano, Pont. Commissione di Archeologia Sacra, Biblioteca Vaticana, R.G. Arte-Arch., I 92, int. 2. The Ms. was brought to our attention by Professor R. Malmstrom.).

1957—8 New excavations undertaken by Krautheimer and Corbett.

D. GENERAL DESCRIPTION

S. Giovanni in Laterano stands on the eastern rise of the Celian Hill, inside and not far from the Aurelian Walls, in the southeastern corner of ancient Rome; its façade faces east, its chancel and apse west (fig. 1). The church, surrounded by other buildings, forms the center of the Lateran complex: to the north stands the massive block of the Lateran Palace begun by Sixtus V in 1586, but completed only after 1650; to the northeast the *Scala Santa*, transferred to its present location in 1586, the thirteenth century chapel of the *Sancta Sanctorum* and the apse



(B. S. R.)

Fig. 1. S. Giovanni in Laterano, Lateran complex and surroundings as of 1943, airview.

of the triclinium of Leo III, the only parts of the medieval palace to survive; to the south the early thirteenth century cloister and its close, still housing the canons; to the southwest the buildings of the Lateran University, the *Ateneo Lateranense*, enlarged and newly built in recent years; to the northwest, the Lateran Baptistery and its adjoining structures [1], and, a hundred meters distant, the hospital of S. Giovanni, which incorporates large parts of the

[1] For the excavations undertaken below the Baptistery and some of the resulting conclusions regarding its building history, see Pelliccioni, *Le Nuove Scoperte sulle Origini del Battistero Lateranense* (*Memorie...Pontificia Accademia Romana di Archeologia* XII, I) Vatican City, 1973.

medieval structure. To the west and north of the Sistine Palace extends Piazza S. Giovanni, marked by the obelisk set up in 1588. The piazza is reached from the north by the steep rise of the Via Merulana coming from S. Maria Maggiore; from the northwest by Via S. Giovanni in Laterano; from the west by Via Sto. Stefano Rotondo running along the crest of the Celian Hill; from the southwest by Via Amba Aradam, formerly Via della Ferratella. Prior to 1586, the old papal palace extended to the north of the basilica in three sections standing at angles to one another, the *Sancta Sanctorum* and the triclinium of Leo III forming the easternmost



Fig. 2. S Giovanni in Laterano. Heemskerck, Lateran palace as of 1532-36.

elements. Remodelled time and again until the late thirteenth century, the palace appears to have incorporated some late antique and possibly some Constantinian parts, the former preserved in the substructures of the *Sancta Sanctorum*. The equestrian statue of Marcus Aurelius, long moved from its original site, stood in the piazza to the west of the palace until 1538 (fig. 2).

The site as it appeared at the time of Constantine and before will be discussed below, based on Colini's presentation [1].

The basilica, as it stands at present, comprises a conglomeration of elements, widely differing in date and character. An *avant-corps* faces eastward. Built by Alessandro Galilei in 1732-1737, this structure consists of a monumental portico surmounted by a loggia designed for imparting the papal benediction; both portico and loggia are linked vertically by the colossal order of the façade (fig. 3). This *avant-corps* backs up against a tall brick wall, erected by Borromini in front of the older façade of the nave and aisles

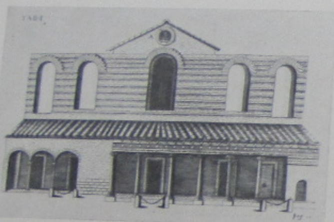


(photo Anderson)

Fig. 3. S. Giovanni in Laterano. Galilei, east façade of basilica, 1732.

[1] Colini, *Celio*, 319 ff.

and intended to form the rear wall of a double-storied portico and loggia, which he planned, but did not execute[1]. Borromini's wall, pierced by four huge openings, which were later blocked, remained in its raw state from 1650 to 1730, as witness Ciampini's illustration (fig. 4) and other contemporary *vedute*[2]; its west face, including the blocked openings, is visible to this day from the aisle roofs[3]. Within the context of our study, however, this wall is less important than the medieval elements which were to be seen behind and in front of it before Galilei's *avant-corps* was built. Behind and above the Borromini wall rises the east gable of the medieval nave, its rear still accessible in the roof space. In front of the wall before 1732 one saw to the left the Chapel of St. Thomas, its entrance turned northward and with a small apse south. Its east flank, facing the visitor, was originally open in a triple arcade; this was subsequently blocked, but its outline remained visible; this arcaded east wall was apparently an earlier feature incorporated in the chapel[4]. Built as the papal vestry, the *secretarium*, the chapel was dated by an inscribed mural to the pontificate of John XII (955-964)[5]. To the right of the chapel of St. Thomas and obviously later in date extended a narthex. Its trabeation rested on six columns with Ionic capitals and a terminating pier; the frieze carried mosaic scenes from the legends of Sylvester, the Baptist and John the Evangelist, the architrave the inscription "*Dogmate papali*" and the signature of the artist, Niccolo d'Angelo. It was a type of narthex frequent in twelfth and early thirteenth century Rome.



(Ciampini, De Sacris Aedificiis)

Fig. 4. S. Giovanni in Laterano. East façade as of 1693, showing the Chapel of St. Thomas, narthex, Borromini's rear wall and the medieval nave gable.

At the opposite or western end of the church projects the long chancel, terminated by an apse and enveloped on three sides by a rectangular ambulatory. It was projected as early as 1869-70 by Andrea Busiri-Vici, but in 1884 construction was entrusted to Vespignani and the new apse was finally consecrated in 1886[6]; it rests on huge substructures sheltering Roman, Constantinian and medieval remains. Starting at the west wall of the transept, this chancel

[1] Borromini's elevation IT AZ 385 (fig. 64), two plans of Carlo Fontana, one in the Royal Library in Windsor (vol. 193, no. 11005) and another in Vat. lat. 9314, fol. 626 and dated 1725, provide some clues, never explored to my knowledge, for Borromini's project.

[2] Above, 8 f. Ancient Illustrations, after 1650, 1688, *ca.* 1700; also 5, 1693, and *ca.* 1707.

[3] My interpretation of this rear wall as the façade of the *castra equitum singularium* presented in youthful enthusiasm and ignorance, *Riv. Arch.* (1933) 231 ff., is, of course, untenable. I can only apologize and refer to the correction presented by Colini, *Celio*, 365, note 112.

[4] Colini, *Celio*, 365, note 112.

[5] Above, 11, fig. 955-964 (Lauer, I, 163 ff.; also Panvinio, *De praecipuis basilicis*, 121 f.). Panvinio reports an inscription he saw in the chapel on an architrave resting on four columns: "HIC LOCUS OLIM SORDENTIS TUMULI SQUALORE CONGESTUS SUMPTU ET TE DOMINE TANTA RUDERUM MOLE SUBLATA QUANTUM CULMINIS NUNC VIDETUR AD OFFERENDUM CHRISTO DEO MUNUS OR...". The inscription is obviously mutilated and the words "*et te Domine*" out of place. Was the architrave then composed of spolia removed from elsewhere? After all, there could not very well have been a "*sordens tumulus*", presumably pagan, on the site of S. Giovanni or in the *Castra*.

[6] Below, 70, 71 and note 3, with bibliography and sources.

takes the place of a medieval apse and ambulatory which will be described further on. Busiri-Vici had worked out an impressive project to move the old apse bodily to the end of the new chancel, but the plan came to naught.

The deep impression S. Giovanni makes on the visitor to-day is determined by Francesco Borromini's remodelling of the nave and aisles from 1646-1650 upon the commission of Innocent X Pamphili[1]. The plan, a nave flanked on either side by an inner and an outer aisle, was retained from that previously existing. Large stretches of the outer walls of the aisles and the entire walls of the nave were also retained, as we shall see, but the supports, both in the nave and in the aisles, were removed. In the new nave, twelve piers, six on either side, carry the upper walls (pl. I; fig. 5). Each pier is articulated by a pair of colossal Corinthian pilasters which rise from the floor to the entablature at the top of the clerestory walls[2]. A vault, planned by Borromini to span the nave, resting on its thin walls and thus presumably of light material, was never executed, but the indentations for volute buttresses prepared for this vault survive



(photo: Anderson)

Fig. 5. S. Giovanni in Laterano. Borromini, interior of nave facing east.

[1] E. Hempel, *Francesco Borromini*, Vienna, 1924, 94 ff.; P. Portoghesi, *Saggi sul Borromini*, (*Quaderni dell'Istituto di Storia dell'Architettura*, 25, 26) Rome, 1960, 65 ff.

[2] For the gradual development of the nave design see Hempel, *Borromini*, 98 ff. and Portoghesi, *Saggi*, *loc. cit.*

along the outer nave walls (figs. 8a, b; see below)[1]. Between the great pilastered piers, and hardly wider than them, five arches on either side open into the inner aisles. On the inner façade a convex eleventh arch equal in span shelters the entrance and links the first two piers, placed diagonally at the east end of the nave. Each pair of pilasters frames, in three successive tiers, a niche, its convex gable projecting forward, a relief — Old Testament scenes to the south, New Testament scenes to the north — and an oval panel framed by a wreath; in 1718 the panels were filled by the figures of prophets on canvas. The arches, corresponding in height to the niches and tiers with reliefs combined, are surmounted by windows, those in the façade and in the middle of each nave wall stressed by flanking columns and higher pediments. The overall design is kept in white. Against it the only colourful elements to stand out are the bases of the piers in grey, the niches in black, their flanking columns in green-speckled Thessalian *verde antico*[2], and reticent gilding on the pilaster capitals and on the crowning entablature of the colossal order. Each niche shelters the figure of an apostle — not in the original program — executed between 1708 and 1718. Since in past publications[3], the piers have been designated occasionally by the names of the apostles, we shall do so ourselves in our ANALYSIS section and we therefore give a list of them here. Counting from the façade and going from east to west, they are:

	North	South	
1.	St. Thaddeus	St. Simon	(on the diagonal piers)
2.	St. Matthew	St. Bartholomew	
3.	St. Philip	St. James Minor	
4.	St. Thomas	St. John the Evangelist	
5.	St. James Major	St. Andrew	
6.	St. Paul	St. Peter	(on the piers adjoining the transept)

In correspondence with the alternating widths of the piers and arches of the nave, the inner aisles are divided into wider and narrower bays. The former are vaulted with flat pendentive domes and are lit by large windows above the roofs of the outer aisles; the latter, hidden behind the nave piers, are now dark and carry barrel vaults. Square piers with concave corners separate the high inner aisles from the lower and darker outer aisles. The bays of the latter, alternating between square and narrow rectangular spaces, are covered by flat ceilings which rest on lintels between the outer and inner aisles and between the bays of the former. Shallow rectangular altar niches accompany the outer aisles, one to each major bay, and are lit by windows. The pavements in the aisles are formed of rhomboids in a grey and white marble perspective pattern. The interlocking and gradation of spaces, rhythm, articulation, colour, light and shade throughout the nave and aisles make Borromini's design one of the great creations of the Roman Baroque.

Borromini's work was confined to the area of the nave and aisles, but even there it remains incomplete. Both the projected *avant-corps* and the vaulting system of the nave were started, but left unfinished. The coffered ceiling, based on a design of Daniele da Volterra, which was begun in 1562 under Pius IV in a campaign of overall repairs and completed under Pius V in 1567, remained in place[4]. Off-center because of the inward curve of the north wall — as we shall

[1] THELEN, "Zur barocken Umgestaltung des Langhauses der Lateran-Basilika," *Kunstchronik* 7 (1953), 261 ff.

[2] The material of these columns, formerly believed to be Lacaedemonian marble, has been correctly identified by R. GNOLI, *Marmora Romana*, Rome, 1971, 137 f.

[3] JOSI, *RAC*, 1934.

[4] ALONX, 13, *fig.* 1562-67. Documentation for this building campaign is found in ROHAULT DE FLEURY, *Latran*, 319 (from Arch. Lat., T67, 1566), LAUER, 602 ff. (from ARS, *Cam. Ap. Fabbriche*, 1562-1602) and LANCIANI, *Storia*, III, 238 f. Repairs and remodellings extended to the apse, the transept, in particular its façade and towers, the nave and the oculus in its façade, and to all the roofs. Whether the roof tiles replaced were actually Constantinian, as then believed (LANCIANI, *loc. cit.*) remains in question. Concerning the date of the nave ceiling, it can be added that the eastern panel now showing the arms of Pius VI previously bore those of a papacy *sede vacante* and thus presumably referred to the short period December 29, 1565 to January 7, 1566. The attribution of the design to Michelangelo, formerly current, has been revised by LANCIANI, (*loc. cit.*), who gives Daniele da Volterra's name.

see, all walls antedate Borromini — it was hung from the roof timbers rather than resting on the walls (pl. II). Borromini was able to leave most of it in position; only at the eastern end did he have to alter the pattern of the coffering substantially to make it fit his obliquely placed façade piers. The construction of the ceiling is exposed in the roof space, *ca.* 3-19 m. high[1], intervening between its base and the platform below the present steel roof. Likewise, the pavement of the nave remained unaltered: an *opus vermiculatum* of porphyry and green and white marble, with its panels filled with zig-zag, diamond and other geometric patterns; it was the gift of Martin V (1419-31) whose arms with the Colonna column still occupy the center panels[2].

The failure to complete the vaulting system and façade planned by Borromini may be due to a combination of factors: Innocent X's fading interest in the project after the Holy Year 1650; the resulting lack of funds; and Borromini's personality, ever procrastinating and difficult to work with. The retention of the fifteenth century pavement may fall into a different category. The terms of Borromini's commission stated expressly that he was to beautify the church but to preserve it as far as possible in its original shape[3]. In particular he was to leave untouched the transept and apse where services had to continue while the nave was being remodelled. There too, however, the plan and masonry were to remain unaltered[4]; and, indeed, contemporary belief was that the oval panels, later closed with the canvasses of prophets, were left bare so as to show the old, supposedly Constantinian, walls of the nave "to recall their age and the piety shown by later generations towards him"[5].



photo Alinari

Fig. 6. S. Giovanni in Laterano. Transept interior, facing south.

The transept and apse thus remained untouched and the former still survives much as it was by the end of the sixteenth century (fig. 6). Its walls, pierced by rectangular windows, are covered inside by the fresco decoration commissioned, like the windows, by Clement VIII (1592-1600)[6]. The Altar of the Sacrament was set up by Clement against the short southern end wall, re-using four ancient bronze columns[7]; the coffered ceiling bears his papal arms.

[1] Professor Malmstrom's figure.

[2] When relaid in 1938 the pavement was thoroughly altered by inserting the arms of Pius XI and changing the patterns and sizes of a number of panels. The late nineteenth century situation is shown, e.g., in LAUER, pl. VIIb, and photo Anderson 101.

[3] HEMPEL, *op. cit.*, 95, quoting the pope's instructions. See also RASPONI, 81, "*Hi* (*scil.* Borromini and Virgilio Spada, his advisor) *igitur agitatis inter se diu...perspectaque Pontificis voluntate a mutanda antiqui aedificii structura...vehementer abhorrentis*"; also MARTINELLI, *Primo trofeo della Croce*, Rome, 1655, 132 f., who gives as reasons for preserving the old building: the devotion of Constantine; the saintliness of the early Christians; the merits of Pope Sylvester and his cardinals ("*del suo sacro Collegio*"); the remains of pagan temples reused "*...li cimenti d'idolatri tempij impiegati in essa...*" to witness the triumph of the true over the false religion; the need to preserve for the city its cathedral, for the West its patriarchal see, for the world the see of its pontifex.

[4] MARTINELLI, *loc. cit.*: "*Ne parева tolerabile...atterrata la basilica...prima che sorgesse la nuova. Onde...il papa...risolse che senza toccar la traversa e Tribuna destinate per li divini uffitij...non s'uscisse dalla pianta stabilita dal Gran Costantino si mantenessero quell'antichi sacrati cementi...quanto possibil fosse...*".

[5] RASPONI, *op. cit.*, 83: "*...ovatae porinde spatia...quibus in spatiis relicta est intacta Costantinianorum parietum antiqua facies, vetustatis memoria et posteritatis erga ipsum pietats ac Religione venerabilis...*".

[6] The painters employed and the subjects of the murals are listed by TITI, *Descrizione*, 1763, 212 ff.

[7] Carol Winslow Brentano is preparing a study of the altar.



(photo: Anderson)

Fig. 7. S. Giovanni in Laterano. Transept north façade, showing medieval towers and the portico of Sixtus V.

The north façade outside, remodelled in its upper portions under Pius IV, in 1562-63[1], has its lower parts hidden behind the portico and *loggia di benedizione* built in 1586 by Sixtus V (fig. 7)[2]. All these elements, however, are just accretions to the medieval transept. Its total height, unchanged under Clement VIII, rises 26.67 m. from its pavement; since this is raised four steps (0.73 m.) above nave level, the height of the transept from nave level is 27.40 m. Its width, measured in the roof space, averages 14.70 m. Beside the triumphal arch rise two huge supports, now incorporated in the westernmost of Borromini's piers, the Peter and Paul piers respectively (pl. I; also figs. 57 and 63). L-shaped, their short arms were embedded in the transept east walls, while their long arms, 17 *palmi* (3.80 m.) long and 8½ *palmi* (1.78 m.) thick[3], formed the eastern end piers of the former nave arcades. To a height of *ca.* 8.80 m. from nave pavement level the supports are built of large stone blocks; higher up the construction turns to brick. The columns placed against them to support the triumphal arch were set up in 1491 by Innocent VIII and the arch was built over them in 1492 by Alexander VI (pl. II and fig. 63)[4]. But there must previously have been another arch springing directly from the flanking supports[5]. Outside, one clearly sees, as one did around 1830 (figs. 8a, b; 10 b), the brick masonry of the upper west, east and south walls of the transept; the



(photo: Corbett)

Fig. 8a. S. Giovanni in Laterano. Transept, north arm, east wall and north east tower.



(photo: Corbett)

Fig. 8b. S. Giovanni in Laterano. Transept south arm, east wall.

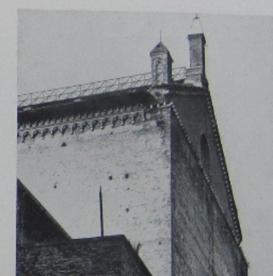
[1] Above, 13, dig. 1562-1567.
[2] Above, 13, dig. 1586.
[3] Borromini's plan, IT AZ 374 (our fig. 57). Professor Malmstrom has measured 1.70 m.
[4] Above, 13, digs. 1492-1503.
[5] Above, 12, dig. 1411. The reference in the *Diarium Romanum* of Antonio di Pietro, as quoted *ibid.* to a bolt of lightning in 1411 which struck first the campanile, then "*...in archo et columna ante circuitum maioris altaris...*", third, "*... portam maiorem dicte ecclesiae...*", presumably the north portal, may be to one of the bronze columns rather than a column supporting the triumphal arch.

buttresses on the east and west walls marking two bays; in each wing in the outer bays of the east wall the outlines of tall and narrow windows, with pointed arches but without tracery visible in place of the rectangular openings of Clement VIII (figs. 8a, b; 10a, b)[1]; the short south wall with an oculus in the center and a wing wall projecting eastwards (figs. 9a, b); the north transept wall with wings projecting both east and west; and towers inserted behind these wings rising above the north façade. A bracketed cornice crowns the south wall, while pointed-arch friezes of a different type are superimposed on the east and west walls (figs. 8a, b; 9b). Inside the roof space one sees the outline of the south gable, and on the north, the reverse face of a cavetto which on the outside, above the porch of Sixtus V, crowns the north façade of the transept. Clearly, all this was not built in one campaign, but it is not our task to disentangle these later building phases[2]. We merely note that the towers, built in tufa — *opus saracinescum* — stand against the pre-existing walls of the transept, its wing walls and, in the northeast tower, the aisle wall (pl. I; figs. 41 ff.); we also note the superimposed friezes; and their abrupt meeting with the bracketed cornice of the south wall; also the cavetto over the north façade, perhaps of fourteenth century date.



(photo: Corbett)

Fig. 9a. S. Giovanni in Laterano. Transept south façade, from south.



(photo: Corbett)

Fig. 9b. S. Giovanni in Laterano. Transept south façade, from west.

The apse, demolished in 1878, is known from photographs, older drawings and plans (figs. 10a, b; 12; 13). Its *opus saracinescum* footing survives, atop the Constantinian apse foundation (fig. 37). Semicircular inside, the medieval apse was polygonal outside, composed of six sides of a dodecagon. Shafts, backed by responds, marked the corners; blind and flat semicircular arches framed the six sides; slender narrow windows with pointed arches without tracery pierced the four inner sides. A bracketed cornice, resembling that of the south transept wall terminated the structure. Like the transept, the apse was built of brick. Inside, inscriptions gave the date 1291, the name of Nicholas IV, the donor of the mosaic and, one supposes, of the apse itself. The inscriptions claim that Nicholas rebuilt the ruined rear and front parts of the church, "*...partem posteriorem et anteriorem ruinosas...a fundamentis reaedificari fecit...*", and "*...ante retroque levat, destructa reformat et ornat et*

[1] Professor Malmstrom tentatively draws attention to what may be the trace of a pointed window below the sixteenth century window visible in Parker's photograph, LAUER, pl. III.
[2] Professors Malmstrom and Volker Hoffmann are planning a study of the medieval transept and its history.



(Lateran Archive)

Fig. 10a. S. Giovanni in Laterano. Apse and transept from southwest, photograph 1876.

fundamentis partem componit ab imis...". One is inclined to refer "*ante retroque*" to the east façade and the transept and apse respectively, the latter two perhaps built in several campaigns (figs. 10a, b).

An ambulatory, subdivided by columns into two vaulted naves, enveloped the apse (figs. 10a, b; 12; 13)[1]. Its foundation wall in *opus saracinescum* is preserved in the excavation area; the upper wall, in brickwork not as neat as that of the apse, is known from photographs. Apparently it was added to the apse somewhat later, since its roof cut off a full 1.06 m. of the apse windows[2].

In our context the medieval walls of the nave are more important. Borromini, one recalls, preserved them and Rasponi describes the means employed. The upper north wall had curved inward as much as *ca.* 0.80 m.[3]. The deviation was corrected by consolidating the foundations and by adding new walls externally to both nave walls, clamped to the old ones, forcing these back as far as possible to the original plumb line. The remaining inward bulge on the north was shaved off[4]. Inside, the repairs were hidden behind the articulating colossal order; the outer walls added by Borromini, on the other hand, are visible in their entirety as mentioned before, and they effectively conceal the medieval walls. However, large parts of the top sections of the walls remain visible in the roof space between the sixteenth century ceiling and the upper platform (pl. II). Surmounted by two stretches of brickwork, the upper of nineteenth century date and *ca.* 2.00 m. high, the lower of sixteenth century masonry and 1.20 m. high, the medieval walls rise



(Gab. Naz. delle Stampe, Roma)

Fig. 10b. S. Giovanni in Laterano. De Vico, transept and apse from southwest, *ca.* 1830-41, watercolour.

[1] MALMSTROM, 1973.

[2] BUSIRI-VICI, *Progetti*, 18.

[3] RASPONI, *op. cit.*, 80: "*...latus Ecclesiae...dexterum...media sui parte sese introrsus in Ecclesiam projecerat, ut perpendiculum...ab ipsius parietis crepidine tribus ferme palmis ac dimidio distans incideret...*".

[4] *Ibid.*, 80: "*...in corrigenda...dexterae...parietis inclinatione...fundamenta...nova substructione confirmare, ac dilatare necesse fuit... Quibus absolutis ad posteriorem utriusque muri partem ductus est alter murus aequalis fene cum priore crassitie, cumque illo...adeo ferrearum catenarum beneficio arcte, solidaque coalescens, ut unicum prorsus aedificium videri possit; illudque necessario accidit, ut paries dexter toto...curvitatis spatio crassior altero evaderet; eo autem excessu...postea reciso, ac tota muri facie ad perpendiculum complanata...*".

to 24.60 m. from the present nave floor on either side[1]. The medieval nave was thus 2.80 m. lower than the transept, the walls of which rise 27.40 m. above nave floor level. Indeed, the two transept buttresses in line with the nave walls protrude into the roof space of the nave and rise 1.10 m. above the sixteenth century walls and 2.20 m. above the medieval walls. Built in neat late medieval brick construction — the bricks average 0.035 m., the mortar beds 0.013-0.02 m., the modulus of five courses 0.25 m. — the nave walls in the roof spaces stand 18.86 m. apart as against 16.98 m. for the width of Borromini's nave at floor level. At the east end one sees the façade gable, at the west end the gable surmounting the triumphal arch separating the nave from the transept; both are of medieval construction, though raised in the campaign of 1562-67. The distance between the gables, 74.59 m., represents the inner length of the medieval nave; adding the thickness of the wall surmounting the triumphal arch, 1.27 m., and the width of the transept, 14.70 m., the total inner length of the medieval church to the springing of the apse measures 90.56 m. The east gable still shows its medieval outline pierced by the blocked sixteenth century oculus. The gable over the triumphal arch bears the arms of Alexander VI on a marble panel. One of the corbels to support the purlins of the sloping roof of Pius IV survives; its beams were recorded, prior to the construction of the present steel roof, as resting on low brackets placed on top of rather than inserted into the sixteenth century capping of the walls (pl. II)[2]. The beam holes for an earlier, presumably late medieval roof still show along the top of the medieval stretches of the side walls. The nave walls, including the outer strengthening added by Borromini, are 1.53 m. thick and since the addition appears to measure 0.46 m., the original thickness of the medieval nave walls may be gauged as 1.07 m. At a distance of 19.40 m. from the triumphal arch, one notes how the inside of the north wall was shaved back by Borromini[3]. In our context it is of greater significance that this same wall, for a distance of 4.59 m. from the façade gable is, on the inside, 0.35 m. thinner than for the rest of its length and of a different masonry technique — small tufa stones mingled with brick, continued on the façade (Professor Malmstrom).

To envisage the church, however, as it presented itself prior to Borromini's remodelling we have to anticipate some of the results gained from the graphic and literary evidence discussed further on in detail (figs. 57, 58, 63, 68, 69)[4]. The double aisles on either side of the nave were separated by arcades resting on green-speckled *verde antico* columns, twenty-one north and south (fig. 77, below). A common roof covered both aisles, sloping upward at 26.8 degrees and meeting the nave wall 17.80 m. from the present floor level. The traces of both roofs are still seen on the east walls of the transept. The nave, in the rebuilding following the fire of 1361, was carried by a series of octagonal brick piers, stumpy and only 30 *palmi* (6.69 m.) high (fig. 63)[5]. Only near the façade did eight original columns survive, four on either side, once that rebuilding was completed; two more, the fifth on either side, were swallowed up by the first nave piers north and south. By the late sixteenth century, one of the freestanding columns had gone[6], by 1646 three more (figs. 57 f.)[7]. These columns, the last remains of the Constantinian colonnade, will occupy our attention later on. As discussed in detail by Professor Malmstrom, eleven piers on either side, including the two which had enveloped the two columns, filled the western two thirds of the nave[8]. He has also pointed out that the piers were more widely spaced than the columns, 4.13 m. as against 4.00 m., and that they did not occupy the places

[1] Professors Malmstrom and Hoffmann measure *ca.* 25.25 m.

[2] GIOVENALE, *La basilica di S. Maria in Cosmedin*, Rome, 1927, 258, fig. 79.

[3] Above, 22 and note 4.

[4] Below, 47 ff., 54 ff. and 66 ff.

[5] Above, 12, digs. 1361 and 1362-69; MALMSTROM 1967.

[6] PANVINIO, as quoted below, 67.

[7] RASPONI, as quoted below, 69.

[8] MALMSTROM, 1967.

of the original columns (fig. 63)[1]. The piers carried arches of "two orders", with a second underlying soffit; they reached a height of *ca.* 41½ *palmi* (9.25 m.)[2]. Above the arcades, the upper walls rose *ca.* 70 *palmi* (15.60 m.) to the sills of the clerestory windows. There were on either side eight of these, 35 *palmi* (7.80 m.) high, with pointed arches and filled with comparatively simple, triple-arched Gothic tracery. By Borromini's time the apexes were cut off by the ceiling of Pius IV. The small round panes filling the windows were renewed by Pius V, witness his arms in the westernmost window north. The mural decoration begun under Martin V by Gentile da Fabriano and continued after 1431 by Pisanello was never completed. It was to have shown, above the arcade, in a first tier, scenes from the life of the Baptist in large panels, *ca.* 4.00 m. square; a surmounting frieze would have contained half-figures of Prophets while the major Prophets would have occupied Gothic niches between the clerestory windows.

This is the way Borromini found the church before he began his remodelling campaign.

E. ANALYSIS

1. Archaeological evidence.

a. THE SITE

Finds made over the past two centuries below the Lateran complex and in its surroundings give a fairly clear picture of that sector of the eastern end of the Celian Hill in Roman times (fig. 11). The evidence first gathered by Colini thirty years ago has been supplemented, if marginally, by more recent discoveries. We can do no better than follow his masterly presentation[3].

The Aurelian Wall from Porta Maggiore and S. Croce in Gerusalemme to Porta Metronia runs for one and a half kilometers due northeast and southwest. Not quite two hundred meters east of the basilica it was pierced by the Porta Asinaria, but that gate was blocked when it was replaced in 1575 by the Porta S. Giovanni, 80 m. further east. Southwest of the Porta Asinaria and 40 m. due south of the church a postern gate formerly pierced the wall, but was blocked at an early date. To the southwest Porta Metronia was the next ancient city gate. Inside the wall the present network of streets corresponds by and large to that existing in antiquity. Via Sto. Stefano follows the track of the Roman Caelimontana, coming from the west along the crest of the Celian, continuing east towards S. Croce in Gerusalemme and always accompanied by the arches of the Claudian acqueduct, the *arcus Neroniani*. Via S. Giovanni in Laterano retraces the old Via Tusculana, climbing the hill from the northwest to the present piazza, somewhat beyond the corner of the hospital of S. Giovanni; in the Middle Ages, as *Via Maior*, *Via Lateranensis* or *Via Papalis*, it became the principal approach to the Lateran from the city; in Roman times it continued, turning sharply south in the piazza, to the postern gate in the Aurelian Wall. Likewise, Via Merulana appears to follow a Roman street coming from the north, descending the southern slope of the Esquiline and then ascending the northern slope of the Celian to continue towards Porta Asinaria.

[1] MALMSTROM, 1967.

[2] See also Borromini, IT AZ 374 (our fig. 57).

[3] COLINI, *Celio*, 322 ff.; also LANCIANI, *F.U.R.*, pls. 30, 31, 37.

Delimited and traversed by this network of streets, a number of mansions built by wealthy families from the first to the third centuries A.D. were scattered over the area (fig. 12)[1]. The remains of the *domus* belonging to the maternal grandfather of Marcus Aurelius, L. Verus Annius, have been located below the eastward tract of the hospital of S. Giovanni; they include what may have been the original seating of the equestrian statue of the emperor[2]. Nearby, large parts of a villa which belonged to Marcus Aurelius's mother, the *horti Domitiae Lucillae*, have been found below the northwestern sections of the hospital[3]. Other great families, the Pisones, the Valerii, the Laterani, are known from inscriptions and literary references to

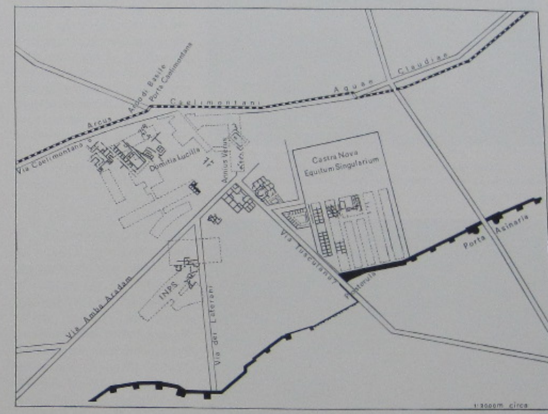


Fig. 11. S. Giovanni in Laterano. Plan of Lateran region in antiquity.

have resided in the neighborhood. The Laterani must have been particularly prominent as the entire area prior to the fourth century had taken the designation *Lateranus*[4]. Their family name cannot, however, be firmly associated with any of the mansions which have come to light in the excavations. Southwest, underneath the modern palazzo of the INPS and across the road from the hospital in Via Amba Aradam, the wing of a huge mansion has come

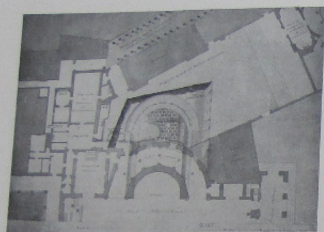
[1] SCRINARI, "Per la storia e la topografia del Laterano", *Bollettino d'Arte*, 50 (1965) 38; also NASH, "Domus Faustae, domus Laterani and the palace of the Popes," *R.Q.Schr.* (1976) in press.

[2] SCRINARI, " Scavi sotto sala Manzoni all'ospedale di S. Giovanni a Roma," *Rendic. Pont. Accad.*, 41 (1968-9) 167 ff.

[3] *Ibid.*

[4] COLINI, *Celio*, 372 ff.

to light; it was built in the time of Septimius Severus or thereabouts and was redecorated early in the fourth century[1]. It has been identified with the *domus Faustae*, allegedly Imperial property, where the synod of 313, presided over by the bishop of Rome, Miltiades, assembled under Constantine's auspices[2]. But the identification is doubtful and there is no evidence that this building, or indeed any other nearby building, was given by Constantine to the bishop of Rome for a residence[3]. Remains of at least two other *domus* existed west and southwest of the basilica. The ruin of a sizeable *thermae* building, presumably part of a large private residence of early third century date, still rises on the right-hand side of the entrance gate of the Lateran University, at the corner of Via Amba Aradam[4]. Distinct and separated from it in ancient times by the southern stretch of the Via Tusculana, another mansion, remodelled many times from the first through the third century, served as another private *thermae* before being replaced by Constantine's Baptistery[5]. Further east still, across Via Tusculana, another *domus* was found when Vespignani extended the chancel of the basilica westwards (figs. 12, 13, 14, 62a)[6]. Trapezoidal in plan, it was comparatively small, but lavishly appointed, as witness the mosaic of its courtyard, 7.45 m.



(Racc. Lanciani, vol. 41, 11145)

Fig. 12. S. Giovanni in Laterano. Vespignani, plan of medieval apse and ambulatory, mosaic of trapezoidal *domus* and foundations of new chancel, 1877.



(Racc. Lanciani, vol. 42, 34318)

Fig. 13. S. Giovanni in Laterano. Trapezoidal *domus* with mosaic and foundation wall of medieval ambulatory, as of 1877-8.

[1] SCRINARI, *op. cit.*, *Bollettino d'Arte*, 50 (1965) 38.

[2] SCRINARI, *loc. cit.*; also NASH, as above, 25, note 1.

[3] NASH, *loc. cit.*

[4] COLINI, *Celio*, 334 ff.

[5] PELLICCIONI, *Le nuove scoperte sulle origini del battistero Lateranense*, *Atti della Pont. Accad. Rom. di Arch.*, serie III, 1973, *Memorie*, XII,I.

[6] BUSIRI-VICI, *Progetti*, 51.; COLINI, *Celio*, 350 ff.; PELLICCIONI, *op. cit.*, 65 ff.

below the pavement level of the basilica[1]. Dating from the early third century it replaced an earlier, possibly first century residence[2]. Its east wing and courtyard were invaded by the foundation walls of the Constantinian apse and medieval ambulatory, but they are still visible in the substructures of the new chancel. Finally, a large private residence stood in the area subsequently occupied by the basilica and cloister (fig. 14)[3]. Originating before the middle of the first century A.D., some rooms of its eastern wing, rebuilt and redecorated around 100 A.D., are preserved below the second bay of Borromini's nave and north aisle, perpendicular to their axes; the western wing, descending the slope in terraces below the fourth and fifth bays of the nave and 5.55 m. below its level, runs northwest to southeast, parallel with Via Tusculana; other remains survive below the cloister. This may be the mansion, confiscated in 65 A.D., which had belonged to the Laterani, the *egregiae Lateranorum aedes* from which the quarter derives its name[4].

In any event, at the end of the second century the mansion was replaced by the camp of the horse guards, the *castra nova equitum singularium* (fig. 14 and pls. I, II). Like the *domus* it replaced, the camp, apparently in use by 197 A.D.[5], was discovered by Enrico Josi, who in 1934-38 excavated it along with the *domus* and the foundation walls of Constantine's basilica. The rooms of the *domus* had been in part demolished and in part were buried in the basements of the barracks. Standing 5.35 m. high, divided into cells and vaulted, these basement rooms as well as the intervals between the barrack buildings were, it seems, from the outset filled in to create a large terrace. We find the same technique of construction at St. Peter's when the mausolea, in part divided by new partition walls into cells, were filled in to create the platform for Constantine's church. In the *castra equitum singularium*, this terrace, only 1.40 m. below present nave level, carried the ground floor of the barrack buildings. These, like the basement walls, were constructed in brickfaced concrete, modulus five brick and five mortar courses 0.26 m., in *opus listatum* with alternating brick and tufa courses[6]. The walls of the ground floor are preserved as high as 1.10 m. Eastwards, below the second and third bays of Borromini's nave, the walls of the command post, the *praetorium*, survive: a courtyard or hall, 15 m. by 21 m., enclosed on the north by a pillared portico, on the south by the *sacrarium* of the camp, on the east by two rooms, one the officers' mess whose dedicatory inscription provides the date 197 A.D., and on the west by two other sizable rooms. Further west, two barrack buildings (*strigae*), each with two rows of rooms, run north and south below the fifth bay of Borromini's nave and below the transept; their original length is unknown. Of the first *striga* the whole basement and the ground floor to a height of 0.30 m., survives below nave level; of the second *striga* only the barrel-vaulted rooms of the basement remain. Below the cloister the similarly vaulted basement of another *striga* is aligned with that below the transept. The wall of what may have been yet another *striga* was encountered at the beginning of the excavation campaign in 1934. A photograph survives and its position was recorded (pl. I; fig. 14)[7].

[1] BUSIRI-VICI, *Progetti*, 6f., (quoted also, COLINI, *Celio*, 330, note 68). Our own measurement, arrived at by increment of the steps ascending and descending in the excavation was 7.33 m.; but we prefer Busiri-Vici's, which was presumably taken directly.

[2] PELLICCIONI, *op. cit.*, 9 ff.

[3] COLINI, *Celio*, 344 ff.

[4] COLINI, *Celio*, *loc. cit.* and 372 f.

[5] We doubt PELLICCIONI's suggestion, *op. cit.*, 37 f., note 5, that the westernmost barrack buildings belonged to an earlier camp. If we understand him, he apparently interprets the substructures of the Severan camp as the groundfloor of earlier buildings.

[6] The levels of the *castra* are based on the following data: height of basement rooms to apex of vault, 5.35 m.; level of this apex, 0.03 m. above floor of confessio, which in turn is 2.21 m. below present nave level; hence basement floor level, 2.21 + (5.35-0.03) = 2.21 + 5.32 = 7.35 m. below nave level, all measured directly; groundfloor of barracks, -1.40 m. below nave level (COLINI, *Celio*, 353); groundfloor walls preserved 1.10 m. high, hence -0.30 m. below nave; hence, thickness of basement vaults, 7.53 - (5.32 + 0.03) = 7.53 - 5.35 = 2.18 - 1.40 = 0.78 m. The level of the *domus* below the *castra* and under the cloister results from COLINI, *Celio*, pl. XIX, where the trapezoidal *domus* is marked as 41.40 m., the *domus* below the cloister as 43.30 m. above sea level. Given Busiri-Vici's figure of 7.53 m. below nave level for the former, the latter should be 5.43 m. below nave level.

[7] JOSI, *Scoperte*, 5 and 10, fig. 8; photograph FCAS, 12341.

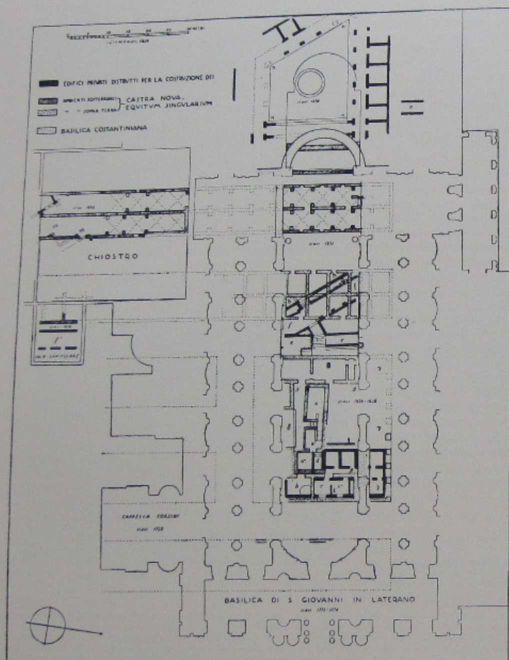


Fig. 14. S. Giovanni in Laterano. Gismondi, plan of excavations below church and cloister.

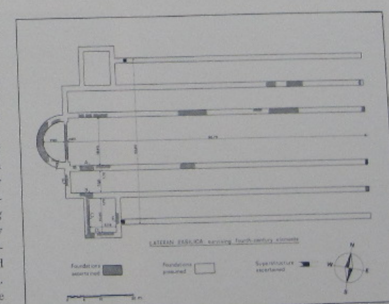
Found at a distance of 6.42 m. from the nave portal, it ran north and south like all the barrack walls, and like those of the other *strigae* it was 0.65 m. thick. Its distance from the east wall of the *praetorium* buildings, (9.00 - 0.65 = 8.35 m.) equals that from the west wall of the *praetorium* to the next *striga* on the west. Finally, within the foundation of Constantine's apse, the perimeter wall of the camp, 1.30 m. thick, towers 7.53 m. above the courtyard of the trapezoidal *domus* at its foot; part of it, near the footing, is seen incorporated in the outer face of the apse (fig. 36). Inside, the enclosure wall seems to have served simultaneously as the western wall of a cistern, protected by *opus signinum* and belonging to the *castra*. The east wall of the cistern, 4.50 m. distant and 1.20 m. thick, was used in the construction of the basilica to carry the chord wall of the apse.

b) THE BASILICA [1]

Slightly more than a century after its construction the camp was abandoned to make room for Constantine's basilica. The barrack buildings were razed 0.30 m. from groundfloor level; and an area, some 60 m. wide and roughly 100 m. long, running east and west through the *castra*, was assigned to the nave and aisles of the new building. The apex of the apse projected beyond the barracks area and invaded the site of the trapezoidal *domus* adjoining the western limits of the camp. The level of the new structure was placed *ca.* 1.10 m. above the floor level of the barracks and thus 0.30 m. below present nave level.

1. *The foundation walls.*

The foundation walls outline the overall plan of Constantine's basilica: a nave flanked on both sides by inner and outer aisles; a semicircular apse at the western end of the nave and, certainly to the south and presumably to the north as well, a side chamber or aisle-transept projecting south from the inner aisle and thus cutting off the west end of the outer aisle (fig. 15). The foundations of the apse and of the end wall of the south aisle were uncovered by Busiri-Vici in 1876, protected by a vaulting system constructed by Vespignani, and forgotten until rediscovered by Enrico Josi in 1933. The foundations of the nave and those of the arcade dividing the aisles to the north were exca-



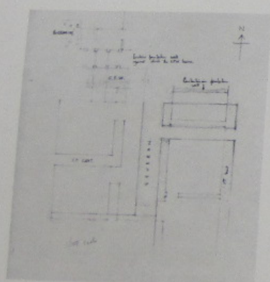
(Corbett, Micchiel)

Fig. 15. S. Giovanni in Laterano. Constantinian basilica, foundations and rising walls preserved, sketchplan.

[1] See *Note Lateranensi* and *Tentativo*, *passim*.

vated by *Josi* in four campaigns, 1934-38, and made accessible. A large number of photographs taken under his direction have as yet been published only in part. We are greatly obliged to Professor Josi and the Pontificia Commissione di Archeologia Sacra for permission to publish some of them in the present volume. They illustrate parts of the basilica unknown heretofore and help to clarify its original layout and aspect. The foundations of the south aisle-transept and the aisle arcade were found in 1958 and 1959 by the authors of this section of the *Corpus*.

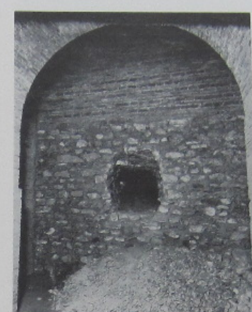
The nave foundation to the north was traced in 1934-38 to nearly its entire length from the springing of the apse almost to the façade, though only in a few places was it excavated to its full depth; that to the south was traced only in part. Stretches of both walls remain visible in the excavation area left open below the nave and transept. The south face of the north foundation is seen to a depth of 7.53 m. below nave level (figs. 17, 18, 19), measured in the transept area, and to a depth of 5.08 m. between the fourth and fifth piers north, the Sts. Thomas and James Major piers (pl. II). It is seen again between the second and third of the Borromini piers north, the Sts. Matthew and Philip piers respectively; in that stretch its eastern part sits atop one of the reticulate walls of the *domus* antedating the *castra* (fig. 16). Its western portion leans against the Severan foundation which supported the piers of a portico on the northern flank of the *praetorium* [1]. As a result, the Constantinian foundation wall at that point could be reduced in thickness to 1.15 m. During the excavation campaign it was pierced at this point to provide access to the area below the north aisle; therefore, it is seen in cross-section (fig. 28). The north face of the south foundation, is seen below the transept to a level 7.53 m. below present nave level, while between the fourth and fifth piers, those of Sts. John the Evangelist and Andrew, it reaches a depth of only *ca.* 1.00 m. The south face of the south foundation below the transept was seen by us in 1957. Further stretches of the nave foundations are known from photographs taken at the time of the excavation: the north face of the north foundation below the St. Philip pier, and between the second and third north, the Sts. Matthew and Philip piers (fig. 15; pl. I) and below the St. James Minor pier, the third south. Likewise, the foundation wall of the arcade which divided the inner and outer northern aisles is known only from two photographs taken in 1934-38; both show the southern face of the wall, one between the third and fourth, the other between the fourth and fifth aisle piers, that is, in line with the second arch and the third pier of the nave (figs. 34, 35). The corresponding south foundation wall was found in 1957 below the transept where, inside the barrack basement, it is seen to deviate at a slight angle from its overall direction (figs. 21, 26). The same campaign



(Corbett)

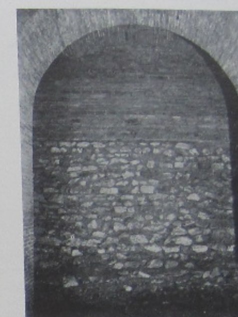
Fig. 16. S. Giovanni in Laterano. Constantinian basilica, nave foundation north, between Borromini piers II and III, sketchplan.

[1] Above, 27.



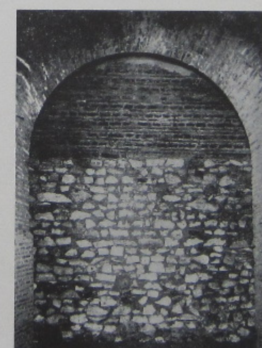
(photo: Pont. Comm. di Arch. Sacra)

Fig. 17. S. Giovanni in Laterano. Constantinian basilica, nave foundation south, below transept, western section.



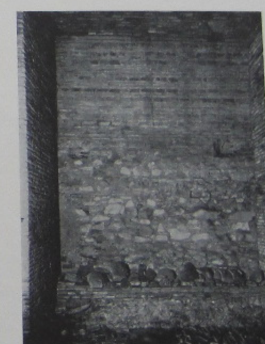
(photo: Corbett)

Fig. 18. S. Giovanni in Laterano. Constantinian basilica, nave foundation south, below transept, eastern section.



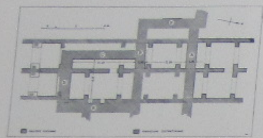
(photo: Pont. Comm. di Arch. Sacra)

Fig. 19. S. Giovanni in Laterano. Constantinian basilica, nave foundation north, below transept.



(photo: Corbett)

Fig. 20. S. Giovanni in Laterano. Constantinian basilica, foundation wall, south aisle, west end.

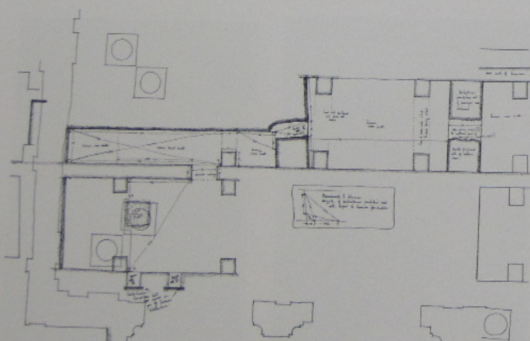


(Corbett)

Fig. 21. S. Giovanni in Laterano. Constantinian basilica, plan of foundations of south aisle and south aisle transept.

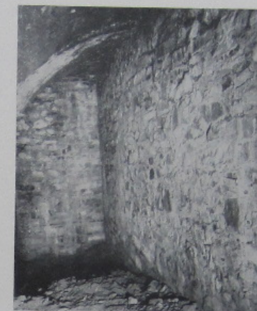
also uncovered the foundations of the west, south and east sides of a projecting chamber, an aisle transept; opening off the inner aisle, its east wall is incorporated in the foundations of the south arm of the medieval transept (figs. 21, 22). Close to the south wall of the chamber a foundation pier was built in 1592 to carry one of the bronze columns, re-used at that time in building Clement VIII's Altar of the Sacrament at the south end of the transept. The foundations of this aisle transept (figs. 23, 24, 25a and b) and of the foundation between the south aisles (fig. 26) are still accessible through a hole cut through the south foundation wall of the nave (fig. 17). In 1956 the southwest corner of the aisle transept had been uncovered, but not securely identified, in the barracks basement below the cloister (figs. 25a, b).

Accessible in a vaulted basement underneath Galilei's narthex are four spur walls at the eastern ends of the foundation walls of the nave and of the arcades separating the inner and outer aisles north and south (pl. I). Their eastward faces are clearly marked, as are their thicknesses which range from 1.55 to 1.80 m. But the distance of their east faces from the foundation of the façade's Constantinian core, of Borromini's lining and of Galilei's second lining, cannot be accurately measured; a distance of about 4.20 m. seems to come close to an accurate estimate,



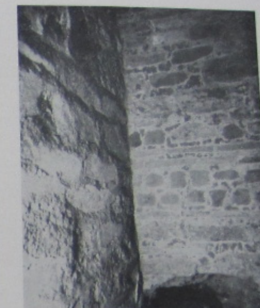
(Corbett)

Fig. 22. S. Giovanni in Laterano. Constantinian basilica, south aisle transept excavation, field notes.



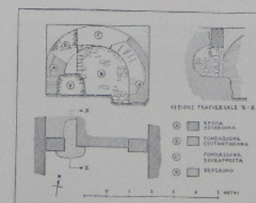
(photo: Corbett)

Fig. 23. S. Giovanni in Laterano. Constantinian basilica, south aisle transept foundations, west (right-hand) and south.



(photo: Corbett)

Fig. 24. S. Giovanni in Laterano. Constantinian basilica, south aisle transept foundations, west (right-hand) and north.



(Corbett)

Fig. 25a. S. Giovanni in Laterano. Constantinian basilica, south aisle transept foundations, south wall, southwest corner; plan, elevation and section.



(photo: Corbett)

Fig. 25b. S. Giovanni in Laterano. Constantinian basilica, foundations south aisle transept, south wall, southwest corner as of 1957.

but the spur at the end of the northern nave arcade may have been longer. Finally, a stretch of the foundation of the western end wall of the inner south aisle was dug up, it appears, in 1876; incorporated into the foundation of the west wall of the medieval south transept arm, it can be seen only from the outside (fig. 20). The foundation of the apse is accessible, both outside and inside, its apex to the west, its shoulders to the east of the *castra* enclosure. The span wall across the apse chord is also visible, though only in its top course.



(photo: Corbett)

Fig. 26. S. Giovanni in Laterano. Constantinian basilica, foundation wall south aisle from north.

In the area of the *castra* the foundation walls of the nave and aisles were sunk into the ground floor and basement rooms of the barracks. All were built in the open, rather than in trenches, inside the barrack buildings. Where the foundation walls encounter the walls of the barracks they oversail or lean against rather than pierce them. Only for the nave foundations were the vaults of the barrack basements broken through; the foundation walls of the south aisle arcade and of the aisle transept reach up to the vaults, but pierce them only at the crown. The foundation wall of the apse, where it extends over the eastern edge of the trapezoidal house, was sunk to an unknown depth below the level of that building and the mosaic of its courtyard[1]. Above that level, it was naturally built in the open, as was the adjoining end wall of the inner aisle to the south.

The Constantinian foundation walls of the nave, of the end wall of the inner south aisle, of the aisle transept which projected from that aisle and of the shoulders of the apse north and south — but only the shoulders — are built in an extraordinarily solid *opus caementicium* formed of large chunks of stone, including numerous fragments of marble, some worked, embedded in very strong and cohesive mortar (figs. 17, 18, 19, 27b, 28). The whole forms a solid resilient mass. This building technique appears to have been used in Constantinian times to carry high walls, whether solid or pierced by arches or trabeated colonnades; the same kind of construction is



(photo: Corbett)

Fig. 27a. S. Giovanni in Laterano. Constantinian basilica, nave foundation south below transept, detail.



(photo: Corbett)

Fig. 27b. S. Giovanni in Laterano. Constantinian basilica, foundation wall, west end of aisle, detail.

found at St. Peter's below the triumphal arch opening from the nave into the transept[2]. At the Lateran, this construction rises unfaced to varying levels: in the north foundation wall it stands to a level 2.48 m. below nave pavement; in the south foundation it reaches down 4.35 m., at points between the fourth and fifth Borromini piers only 2.81 m. and 3.18 m. below the

[1] Colini, *Celio*, 330, note 8.
[2] Below, 187 and fig. 154.

nave. Starting at these varying levels the upper foundation walls of the nave, for the greater part, are faced with *opus listatum*, one to three brick courses alternating with single courses of *tufelli* (figs. 17, 18, 19, 27 a and b, 29). One row of bricks, one row of *tufelli*, two rows of bricks and one of *tufelli* average 0.40 m. in height. However, parts of the north foundation wall seem to be faced, above the *opus caementicium*, with pure brickwork similar to the facing of the apse foundations. The exposed *opus listatum* starts everywhere with a course of *bipedales* and it varies in height from as little as 0.55 m. to as much as 2.00 m. Generally the structure terminates along the nave foundations at a setback, above which the brickwork appears to be late medieval (figs. 32, 33). Ranging in height from 0.50 m. to 1.90 m., this medieval brick zone encloses, near pavement level, a number of travertine blocks: one each has been located between the fourth and fifth piers of Borromini's nave to the north and south (figs. 29, 30, 31), between the second and third piers to the north and below the third pier to the north (fig. 32); two more are known from a photograph, between the first and second piers to the north (fig. 33). The brick zone in the south foundation between the fourth and fifth of Borromini's piers rests not directly on the *opus listatum* zone; instead it appears to sit on the *opus caementicium* wall, which is reinforced and thus hidden by a row of fourteen or fifteen large stone orthostats (fig. 31), 55 cm. high, 40 to 45 cm. wide and 38 cm. deep. These may have been inserted when the brick zone was refaced or rebuilt. The foundations of the aisle and aisle transept projecting south appear to be undisturbed. In the south aisle wall, where it adjoins the



(photo: Pont. Comm. di Arch. Sacra)

Fig. 28. S. Giovanni in Laterano. Constantinian basilica, nave foundation wall north, at passage to north aisle area, as of 1934-8.



(Corbett)

Fig. 29. S. Giovanni in Laterano. Constantinian basilica, nave foundation north with base block, from south between Borromini piers IV and V.



(photo: Pont. Comm. di Arch. Sacra)

Fig. 30. S. Giovanni in Laterano. Constantinian basilica, nave foundation north with base block, from north between Borromini piers IV and V, as of 1934-8.



(photo: Pont. Comm. di Arch. Sacra)

Fig. 31. S. Giovanni in Laterano. Constantinian basilica, nave foundation wall south with base block and adossed blocks, between Borromini piers IV and V, from north.



(photo: Pont. Comm. di Arch. Sacra)

Fig. 32. S. Giovanni in Laterano. Constantinian basilica, nave foundation north with base block from north below Borromini pier III.



(photo: Pont. Comm. di Arch. Sacra)

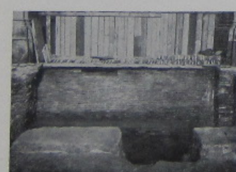
Fig. 33. S. Giovanni in Laterano. Constantinian basilica, nave foundation north with base blocks between Borromini piers I and II, from north.

aisle transept (fig. 26), a zone of Constantinian brickwork with an occasional *tufelli* course is surmounted first by a strip, *ca.* 0.90 m. high, in which reticulate blocks combine with brick courses to form a kind of *opus listatum*, then by strong blocks to carry what apparently was considered the heavier wall of the chamber; while correspondingly the west, north and east foundations of the chamber continue in unfaced, solid *opus caementicium*. On the other hand, the foundation wall of the northern aisle arcade, to judge by the two existing photographs (figs. 34, 35) is faced, above the setback of the *opus listatum* zone, with Constantinian brick masonry roughly 1.80 m. high (reckoning from the number of



(photo: Pont. Comm. di Arch. Sacra)

Fig. 34. S. Giovanni in Laterano. Constantinian basilica, foundations separating north aisles, viewed from south, opposite Borromini nave pier III.

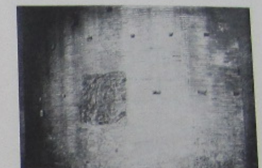


(photo: Pont. Comm. di Arch. Sacra)

Fig. 35. S. Giovanni in Laterano. Constantinian basilica, foundations separating north aisles, viewed from south, between Borromini nave piers II and III.

brick and mortar courses); the modulus of 0.30 m., usually encountered throughout the structure for five brick and five mortar courses, appears also to obtain at this point.

The apse foundation is faced inside and outside with Constantinian brickwork (figs. 36, 37, 38). Five bricks and five mortarbeds average 0.285 to 0.30 m. in height, although at one point lower down on the northern side a modulus of only 0.24 m. for five bricks and five mortarbeds was measured. Rising from the level of the trapezoidal house, 7.53 m. below the present nave level, the apse foundation goes further down to an unknown depth. On the northern side of its outer curve a remnant of the *castra* enclosure is seen (fig. 36). Prevented by the wall of the camp enclosure and its attached cistern from accurately striking the half circle of the apse foundation from a single center, the builders only approximated to an elliptical segment in the part of the curve outside the enclosure. The plan at that point is an irregular bulge (pl. I). Once the level above the enclosure-cistern wall had been reached the deviation could be corrected (pl. I; figs. 38, 39, 40). Therefore, inside the apse at a level *ca.* 1.75 m. below nave level, the wall is set on a curve more accurately circular than at the lower level and there is in consequence a setback (fig. 38). The center of the half circle was placed against the west face of the east wall of the Severan camp cistern and the shoulders of the apse foundation were constructed with a radius of 7.40 m. clear and *ca.* 8.60 m. to the center line of the apse foundation. Atop the eastward Severan cistern wall was built the chord wall of the apse, 0.90 m. thick and set back 0.30 m. from the western edge of its Severan predecessor. Both the south and north shoulders of the apse are preserved in two compartments of the excavation adjoining on the east the Severan enclosure and on the west the cistern wall (figs. 39, 40). The footing of the apse to the north is seen to be built against that wall, but the upper part of the apse foundation oversails it. The resulting setback



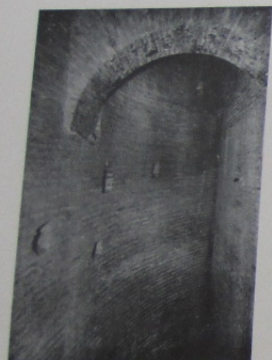
(photo: Pont. Comm. di Arch. Sacra)

Fig. 36. S. Giovanni in Laterano. Constantinian basilica, apse foundation exterior, north half, pierced by *castra* wall.



(photo: Pont. Comm. di Arch. Sacra)

Fig. 37. S. Giovanni in Laterano. Constantinian basilica, apse foundation exterior, southern half, surmounted by foundations of medieval apse.



(photo: Pont. Comm. di Arch. Sacra)

Fig. 38. S. Giovanni in Laterano. Constantinian basilica, apse foundation interior, facing north.

diminishes from 0.16 m. near the northern springing of the apse foundation to 0.11 m. where it meets the enclosure-cistern wall. In contrast to the apex part of the apse outside the camp enclosure, the shoulders of the apse inside rest on a footing built of *opus caementicium* topped by two brick courses and reaching a level 2.49 m. below that of the nave. The footing thus corresponds in technique and height to that of the nave foundations. Set back from its edge 0.61 m. (at the south shoulder 0.64 m.), this *opus caementicium* construction carries the upper foundation walls of the apse shoulders, both brickfaced and preserved 0.72 m. high, and thus 1.77 m. below nave level. To the north, after the second setback of 0.11 to 0.16 m. mentioned above, the wall rises a further 1.20 m. The brick face in appearance resembles that of the apex part of the apse. Apparently, then, the builders working inside the camp area continued the *opus caementicium* of the nave foundations into the lower parts of the apse shoulders; outside, brickfacing started at the lowest visible part of the apse foundations (fig. 37). Resting atop the Constantinian foundation the footing of the apse of Nicholas IV and the bottom courses of the articulating corner shafts are seen.

The longitudinal foundation walls of the nave and aisles are all 1.70 m. thick, but those of the



(photo: Corbett)

Fig. 39. S. Giovanni in Laterano. Constantinian basilica, apse foundation south shoulder.



(photo: Corbett)

Fig. 40. S. Giovanni in Laterano. Constantinian basilica, apse foundation, north shoulder.

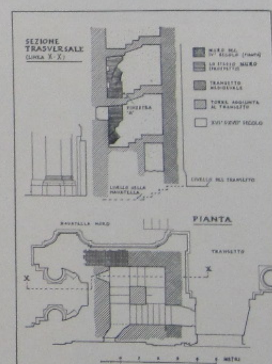
terminating spur walls, to the east, range from 1.55 m. for the spur of the foundation which carried the arcade between the two south aisles, to 1.80 m. for those terminating the nave foundations as well as that at the end of the northern aisle arcade. The east and west walls of the aisle transept appear to be 1.70 m. thick, while its short south wall measures 2.00 m. The span wall across the chord of the apse is 0.90 m. thick, the apse wall, 2.36 m. (pl. I).

The foundation walls of the nave, measured from the chord of the apse to the end of the spur walls beyond the façade, appear to be 95.75 m. long (pl. I and fig. 15 above). They are, wherever measurable, 18.40 m. distant from one another. The distance between the nave foundation south and that of the aisle arcade is 7.13 m. [1]. The aisle transept at foundation level measures in the clear 8.05 m. by 10.90 m. (figs. 15, 21).

2. *Above ground.*

Part of the Constantinian walls of the outer aisles are incorporated in the north and south walls of Borromini's rebuilding. They have been located at four points, in more or less extensive fragments, some including traces of windows and doorways.

On the north side of the basilica a fragment of the Constantinian aisle wall is accessible inside the medieval east tower adjoining the north transept (figs. 41, 42, 43, 44). It appears on the left, that is, eastward in the south wall of the tower which is 2.87 m. wide. Cut off to the east by the east wall of the tower and at its nearest point 2.13 m. distant from the transept wall to the west, its greatest visible width is only 0.78 m., but it rises over 7.60 m. above present nave level. Its lower parts are hidden by the stairs inside the tower. Starting 2.90 m. from nave level and curving westward to a height of 3.30 m. the fragment of an arch is seen. Springing from what may be the seating hole of a lost lintel, whether of wood or of stone, it apparently surmounted the headlight of a doorway, the jamb of which is hidden by the east wall of the tower (fig. 42). Higher up and slightly further west, 2.09 m. from the transept wall and starting 4.15 m. from nave level, is the vertical jamb of a window, 1.95 m. high. Above, and set back 9 cm., an arch curves westward (fig. 43), but is broken off at a height of 6.70 m. above nave level. From the measurements of its curve an original span of ap-



(Corbett)

Fig. 41. S. Giovanni in Laterano. Constantinian basilica, north aisle wall inside northeast tower, plan and elevation.

[1] *Note Lateranensi II*, fig. 3, mistakenly gives the figure 7.00 m.



(photo: Pont. Comm. di Arch. Sacra)

Fig. 42. S. Giovanni in Laterano. Constantinian basilica, north aisle wall, arch of doorway and window jamb.

proximately 1.60 m. can be deduced. The building technique is clearly Constantinian: bricks 25-40 mm. and mortarbeds 20-32 mm. high in a modulus of five bricks and five mortarbeds 30 - 31.5 cm., just over 1 R. ft. The mortarbeds are smooth, descending inward in the horizontal courses, prism-shaped between the bricks of the door arch (fig. 44), and slightly scooped in the window arch.

Other remains, presumably belonging to the Constantinian north aisle, are seen from a small courtyard of the adjoining palace, inserted between the Cappella Massimo on the east and the double portal that links the basilica to the palace on the west. Starting from the niche, which shelters the tomb of Cardinal Rasponi and protrudes into the courtyard, and thus at a point 31.20 m. from the east wall of the medieval transept, there is a stretch of brickwork distinct from the sloppy seventeenth century masonry above and on either side of it (fig. 45). The stretch thus incorporated into Borromini's aisle wall seems to share the characteristics of the technique seen in the verifiably Constantinian parts of the structure: a modulus of five bricks and mortarbeds 0.305 m. high and wide smooth mortarbeds with a slight down and inward slope (*R. K.*; but *S. C.*, while agreeing on the brickwork's antedating Borromini's campaign, remains doubtful as to its Constantinian character.) This distinctive



(photo: Pont. Comm. di Arch. Sacra)

Fig. 43. S. Giovanni in Laterano. Constantinian basilica, north aisle wall, window jamb and arch.



(photo: Corbett)

Fig. 44. S. Giovanni in Laterano. Constantinian basilica, north aisle wall, arch of doorway, detail.

stretch of brickwork extends *ca.* 3.50 m. east from the Rasponi niche. At a level 4.20 m. above the nave floor and 1.32 m. east of the niche a fissure rises vertically, to be cut off *ca.* 1.30 m. higher up. The position and the sharp edge of this perpendicular division formerly led us to identify it as the right-hand jamb of a window[1]; but we withdraw the hypothesis and now believe that the perpendicular line marks the break-off of the old masonry caused by Borromini's rebuilding.



(photo: Pont. Comm. di Arch. Sacra)

Fig. 45. S. Giovanni in Laterano. Constantinian basilica, north aisle, fragment.

A Constantinian window is located with certainty in the wall of the outer aisle to the south, at a point opposite to and corresponding with the window inside the northeast transept tower, described above. Closely adhering to the east wall of the medieval south transept arm and incorporated into the lower part of one of its buttresses, a fragment of the Constantinian aisle wall rises to a point 8.50 m. above the present nave floor (figs. 46, 47). At a level 6.95 m. above the floor it includes the springing and the lower left-hand curve of a window arch; the supporting jamb of the window is also recognizable, notwithstanding the disappearance of its edge. A stretch of masonry 0.95 m. long surmounts the arch and arrives at what may be the original eaves line of the Constantinian aisle. The measurements are nearly equal to those of the corresponding window in the north aisle and the technique of construction is similar.

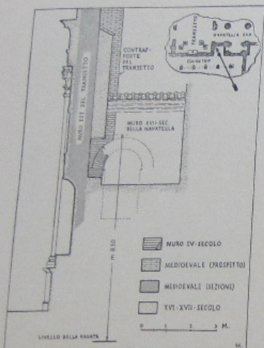
The aisle walls appear to have been only 0.82 - 0.83 m. thick. These at least are the direct measurements taken in the south wall, in the doorway of the passage leading to the cloister and in the jambs of the niches sheltering the altars of Saint Hilarius and of the Death of the Virgin. The south wall of the northeast tower on the north transept also measures 0.83 m. in thickness and it seems to be not less thick than the wall of the Constantinian north aisle on which it rests.

Between the external faces of the north and south aisle walls the total width of the Constantinian basilica is 55.38 m. (pls. I, II; fig. 15), adding the clear width, 53.73 m., to the thickness of the two aisle walls, 1.65 m.[2].

In 1965, R. Malmstrom and R. Stapleford identified a stretch of wall as belonging to the terminating eastern end pier of the northern colonnade of the nave. Its south face and underside are visible, though only for a length of 1.60 m., from inside the oval stairwell prepared, but not used by Borromini, inside the first of his nave piers, the Thaddeus pier (fig. 48). The Constantinian masonry starts 3.98 m. from the ground and the pier, seen from below, seems

[1] *Tentativo*, 128, 146. Certainly the perpendicular does not correspond, as then assumed, to the tenth bay of the aisle arcade.

[2] The width of the aisle walls as measured by us is contrary to that scaled off Borromini's plan, Alb. IT AZ 374, that is 5 *palmi* or 1.11 m. The total width of the church given by that plan, including its walls, is 258 *palmi*, 57.31 m., which differs by almost four meters from that measured. See below, 49.



(Corbett)

Fig. 46. S. Giovanni in Laterano. Constantinian basilica, wall of south aisle and window, elevation.



(photo: Corbett)

Fig. 47. S. Giovanni in Laterano. Constantinian basilica, south aisle, springing of window.



(photo: Malmstrom and Stapleford)

Fig. 48. S. Giovanni in Laterano. Constantinian basilica, end pier of nave arcade north, detail.

to be 1.90 m. thick. The masonry continues to a height of at least 14.80 m. from the present pavement level, suggesting that considerable parts still survive of the Constantinian end pier of the colonnade, of the nave wall and of the façade. The technique of construction is like that of the other Constantinian walls of the basilica, except that the mortarbeds slope down and outward, instead of inward. The difference may be due to the position of the pier in the interior of the church, in contrast to the wall faces on the exterior, so far discussed, the latter requiring protection of the mortarbeds from weathering.

Professor Volker Hoffmann in 1974 took a number of soundings on the façade at the level of the *loggia di benedizione*, *ca.* 16.00 and 18.00 m. from the nave pavement, inside a narrow corridor which Borromini constructed in the thickness of his façade wall. Professor Hoffmann's findings and his conclusions regarding the Constantinian nave façade will appear in *Römisches Jahrbuch für Kunstgeschichte der Bibliotheca Hertziana* 16 (1975); but he was kind enough to let us peruse his manuscript

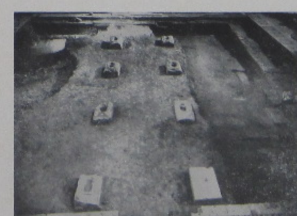
and subsequently to discuss his conclusions. Suffice it to mention here that the soundings at those points accessible encountered medieval fill, apparently used to block preexisting openings. We shall revert to the possible conclusions to be drawn from this evidence for the reconstruction of the Constantinian basilica.

A few photographs taken during the campaign of 1934-38 provide evidence concerning the pavement of the Constantinian church and throw light on the liturgical arrangements. The first shows, below the existing pavement of Martin V, the remains of a floor composed of rectangular and square marble plaques (fig. 49). Battered and patched though they are, they appear to outline a pattern of squares of *giallo antico* marble, framed by darker plaques. The photograph suggests that the old pavement is *ca.* 25 cm. below that of the fifteenth century, and this has been confirmed orally by Enrico Josi. Hence it was placed but a few centimetres above the razed groundfloor walls of the barracks. A second group of photographs shows a large area of the mortarbed of a pavement directly on top of the razed groundfloor walls of the antecedent *castra* (figs. 50, 51); it can only be that of the first, Constantinian, pavement of the church. Inserted into this bed are two parallel rows of marble sockets, four on either side, running east and west along the axis of the nave at an estimated distance of 2.00-3.00 m. apart. The remains are best explained as having supported the parapet posts of a



(photo: Pont. Comm. di Arch. Sacra)

Fig. 49. S. Giovanni in Laterano. Constantinian basilica, remains of pavement, as of 1934-8.



(photo: Pont. Comm. di Arch. Sacra)

Fig. 50. S. Giovanni in Laterano. Constantinian basilica, remains of *solea* facing east.



(photo: Pont. Comm. di Arch. Sacra)

Fig. 51. S. Giovanni in Laterano. Constantinian basilica, remains of *solea* facing northwest.

solea, an enclosed pathway along the axis of the nave, leading to the chancel. This liturgical element has previously been found in Roman churches from the early fifth to the early sixth and perhaps as late as the early eighth century[1]. The photograph does not indicate the exact position of the part of the *solea* shown, but from a report prepared in 1938 by the Ufficio Tecnico Vaticano and the Pontificia Commissione di Archeologia Sacra, preserved in the Vatican Library and identified by Professor Malmstrom, it appears that the remains were located near the middle of the church and more precisely between the third and fourth of Borromini's nave piers, "*... nella terza zona a metà della Chiesa. Si proseguì a rimettere in luce i grandi locali oltre il cortile degli Equites ... La volta di una grande stanza aveva una grossa apertura ... evidentemente prodotta dal crollo del tetto ... Si sono ricuperati e individuati ... parecchi grossi blocchi di marmo, che dalla porta centrale su due file parallele nel centro della navata, formavano una guida di protezione al passaggio fino, è a ritenersi, all'altare ... equidistanti nel livello del pavimento anteriore a quello musivo di Martino V, con foro quadrato nel mezzo per immettervi e fissarvi le transenne ... di marmo essendovi rimasta traccia con spezzatura della colonnetta di marmo ...*"[2].

c) *Disiecta membra.*

In 1959, in exploring the area of the south aisle and the aisle transept below the southern arm of the medieval transept, the fragment of a column shaft was found lying in the fill. Of red granite, its diameter was 1.10 m., a measurement coinciding, as we shall see, with the diameter of the nave column shafts seen by Borromini. The two column shafts re-used in 1491 to support the triumphal arch are of the same material and have the same diameter. This is also approximately the diameter of the nave columns, 5 *palmi* or 1.115 m., seen in place by Borromini and his contemporaries[3]. Hence, we suspect that the column fragment and the columns of the triumphal arch come from the Constantinian nave colonnade (pl. II; figs. 5, 63). The height of the columns at the triumphal arch, including plinths, bases and capitals — but not the pedestals — is 11.07 m. On the left-hand side, the plinth and Attic base measure 0.32 m.; on the right, the column stands on an Ionic base, 0.43 m. in height. Both bases are apparently ancient spoils. The gilded composite capitals with swags are 1.10 m. high, the latter figure agreeing with Borromini's drawing in Berlin[4] (fig. 63); they appear to be of fifteenth century date. The shafts therefore are *ca.* 9.60 m. high.

Other scattered elements surviving in the church and providing evidence for the reconstruction of the Constantinian basilica are twenty-four column shafts of green speckled Thessalian *verde antico* marble. Many of them were provided with new apophygees, neckings, bases and capitals and they were reused by Borromini to flank the Apostle niches in the nave piers. Two control measurements were taken, one of the left-hand column flanking the niche of St. Paul on the sixth pier to the north, the other of the left-hand column on the fourth pier north, the St. Thomas pier. On both columns the apophygee seems original. The measurements

[1] T. F. Mathews, "An early Roman chancel arrangement and its liturgical functions," *RAC*, 38 (1962), 73 ff.

[2] "*Lavori nel pavimento e sottosuolo dell'arcibasilica lateranense*", Ufficio Tecnico Vaticano - Pontificia Commissione di Archeologia Sacra, 3. "...in the third section (*scil.* of the excavation), halfway down the church, rooms beyond the courtyard of the *Equites* continued to come to light...In the vault of a large room, there was a huge hole...evidently produced by the roof caving in ...A number of sizable blocks of marble were uncovered and singled out; running from the central door, in two parallel lines, in the center of the nave, they formed a protection for a passageway, presumably leading to the altar...equidistant, at the level of the pavement below the mosaic of Martin V, with square holes in the middle in which to place and fix parapets...traces of marble remaining, with the fragments of a little marble column still in the hole." The large hole in the ceiling of one of the underlying rooms can be located from Colini, *Celio*, 354, fig. 292.

[3] Below, 51.

[4] Below, 54 ff.

obtained were: height, 3.50 m. and 3.52 m.; diameter 0.44 and 0.46 m. respectively. Originally they were among the forty-two columns (twenty-one each side) which carried the arcades between the inner and outer aisles north and south. They are a remarkable set of spoils of unknown provenance, and time and again they are recorded in graphic and literary documents as one of the most admired features of the church. In 1645 thirty-nine of them were left. Eight columns of the series, of corresponding size are in the Chigi Chapel in Siena — the second left from the entrance, 3.49 m. high[1]; they were transferred there from the Lateran Palace in 1660 and presumably were part of a gift of twelve columns made in 1653 by Innocent X to his nephew, Prince Pamphili. They were intended to be used at S. Agnese in Piazza Navona, but apparently were handed over, if at all, only in part and the gift, regarding eight remaining in the Lateran Palace was, it seems, revoked by Alexander VII[2].



(photo Pont. Comm. di Arch. Sacra)

Fig. 52. S. Giovanni in Laterano. Constantinian basilica, fragment of spandrel.

A further element for envisaging the Constantinian church was found, in 1934, at the foot of the pier of St. Thaddeus, the first nave pier on the north side adjoining the façade; it consisted of the stump of a spandrel between two arches, the voussoirs in brick, springing from a wedge-shaped travertine impost block[3] (figs. 52, 53). It apparently came from one of the aisle arcades, presumably that to the north. Badly battered today, the fragment when photographed in 1934 retained on one face nine bricks in both the left-hand and right-hand archivolts and there were fastening hooks for marble revetment in the intrados of the arches as well as on the face of the spandrel (figs. 52, 53, 54). The bottom of the impost block, as apparent in a photograph, shows a number of dowel holes (fig. 54). At present the number of



(photo Pont. Comm. di Arch. Sacra)

Fig. 53. S Giovanni in Laterano. Constantinian basilica, fragment of spandrel, opposite face.

[1] The measurement was kindly taken by Nicholas Adams.

[2] Hempel, *Borromini*, 105, n. 1; V. Golzio, *Documenti artistici sul seicento nell'Archivio Chigi*, Roma, 1939, 102 f.; see also Krautheimer and Jones, "The Diary of Alexander VII", *Römisches Jahrbuch für Kunstgeschichte der Bibliotheca Hertziana* 15 (1974) 199 ff., items 335, 336 for August 10 and 11, 1660. The composite capitals carried by these columns seem to us to be seventeenth century work, an opinion confirmed by Mr. John Herrmann. We are grateful to Professor Volker Hoffmann for providing us with photographs of the capitals.

[3] Jost, *Scoperte*, 5.

bricks has been reduced, on one face to three and four, on the other to five and five respectively, and the fastening hooks on the faces are gone. However, the remains of those in the intrados of the arches survive, three on either side. The impressions of revetment plaques, 0.18, 0.12 and 0.16 m. high respectively, are visible in the plaster coat which covers each intrados. The bricks of the voussoirs are between 0.38 and 0.43 m. long and 0.03 m. high, and they penetrate 0.17 - 0.22 m. into the mortared rubble core of the stump; the mortarbeds are 0.028 - 0.03 m. high, smooth and flush with the bricks. The dimensions of the stump at present are: maximum height 0.82 m.; width of the impost block 0.66 m. at the bottom, 0.73 m. at the top; height of impost block 0.41 m.; width of spandrel at maximum splay of voussoirs 0.965 m.; depth of intrados 0.74 m. The original bottom width of the spandrel, adding the thickness of the revetment plaques, *ca.* 0.01 m. each, would have been *ca.* 0.74 m. The original height when found was 1.10 m., its maximum width 0.80 m.[1]. Given the shortness of the curves preserved, when we measured the block in 1956, the radius of the arches was hard to establish. At the time we calculated it as between 1.10 and 1.20 m.[2], but the figure must be corrected in the light of evidence obtained from Borromini's surveys of the aisle arcade in plan, elevation and section; these point to a radius of *ca.* 1.35 m. or slightly more.



(photo: Pont. Comm. di Arch. Sacra)

Fig. 54. S. Giovanni in Laterano. Constantinian basilica, fragment of spandrel, bottom.

A marble dado, which now stands in the cloister supporting the base of an altar of the fourth or fifth century, was dug up at the same spot and has been interpreted as another impost block. However, the difference in material, as well as the evident recutting into its present shape makes one doubt this hypothesis[3].

Together with the spandrel stump mentioned above, a number of marble plaques are reported to have been found, "thin and of yellow Numidian marble, polished and all of the same thickness"[4]; they were presumably part of the revetment.



(photo: Pont. Comm. di Arch. Sacra)

Fig. 55. S. Giovanni in Laterano. Constantinian basilica (?), piece of wall or pier, unknown location.

A Corinthian capital of second century (?) date, found nearby[5] and now in the cloister, cannot have been one of those re-used in

[1] Josi, *RAC* (1934), 336.
[2] *Nolz Lateranensi*, I, 83 f.
[3] Josi, *Scoperte*, 6, fig. 4.
[4] Josi, *RAC*, (1934), 341.
[5] Josi, *Scoperte*, 9, fig. 7.

the nave colonnade, given its small size, 0.67 m. high with a diameter of *ca.* 0.56 m. Finally, a fragment of masonry, possibly of considerable significance, has unfortunately disappeared. The only record surviving is a photograph taken in 1934, but without scale. It shows a stump of brick masonry, neatly trimmed and in a technique which may be Constantinian (fig. 55). Rectangular in shape, the fragment was only six brick and mortar courses high and its measurements cannot be determined.

2. Graphic Evidence.

Vedute of S. Giovanni antedating the start of Borromini's rebuilding campaign are numerous; they show exterior views of the transept and clerestory, of the apse and the façade. Plans, on the other hand, are rare and those which exist are of limited value as sources. On the contrary, in preparation for and during the rebuilding of 1646-50, Borromini and his assistants prepared large numbers of plans, sections and elevations of the old church; the majority are exact surveys, provided with scales in *palmi* and hence dependable sources both for envisaging the building as it then stood and for tracing the older parts incorporated in the remodelled structure as it stands today. Needless to say, the surveys show the basilica altered by rebuildings, as documented from the tenth through the sixteenth centuries without differentiating between original Constantinian and later parts; "*muri antichi*", as occasionally marked in Borromini's handwriting, simply means older walls which remained or were to be left standing in the course of his rebuilding. *Vedute*, on the other hand, both interior and exterior, done at that time or later, are of less importance in our context: they either show the medieval transept and apse — a favourite subject in the nineteenth century (fig. 10 b); or they are reconstructions which are interesting, but must be interpreted with caution.

a) Plans.

Bufalini's map of Rome provides in rough outline the earliest known plan of the basilica: the nave, flanked by double aisles on either side, the narthex, the transept and the apse enveloped by the two-aisled ambulatory. The only feature possibly significant is the chancel, which fills the entire central part of the transept, thus enclosing the High Altar in the middle. It was removed apparently under Clement VIII (1592-1600) when the transept was redecorated and the Altar of the Sacrament set up against its southern end wall. In our context it may be important that the chancel seems to have occupied the same site even before the raised transept was built, though on the lower level of the western end of the nave.

Of greater importance is the print of an engraving preserved in the Lateran Archives, apparently the only copy surviving (fig. 56). Measuring 650 by 455 mm., less the margins 22-25 mm. wide, it has often been reproduced from tracings[1]. The plan, scaled in *palmi*, shows the medieval palace, the basilica, the baptistery, the chapel of the Holy Cross opposite and the square of S. Giovanni, with the remains of the Annibaldi tower. The *terminus ante* is, then, 1588, when the palace gave way to that of Sixtus V. A *terminus post* is provided by the Altar of the Virgin Annunciate erected in 1555 in the south transept. The plan shows it standing against the end wall of the transept, below an organ loft carried on columns and filling the entire width of the transept; this was the gift of Cardinal Antonio Martini de Clavibus of Portugal, who

[1] Rohault de Fleury, *Latran*, pl. V; Lauer, 321, fig. 116.



(Lateran Archive)

Fig. 56. S. Giovanni in Laterano. Anonymous, plan of Lateran complex, detail showing church, *ca.* 1575 (?).

died in 1447[1]. The *Porta Santa*, marked on the plan with dotted lines, suggesting its having been opened, makes plausible a date in or shortly after the *Anno Santo*, 1575. The basilica seems to be correctly represented in its main lines and overall measurements, including the chancel, just as in the Bufalini plan; but the Archive plan shows far greater precision in detail, as witness the three doors marked in the nave façade. It also shows columns beside the openings from the aisles into the transept; listed by Panvinio[2], these eight columns were presumably removed in the remodelling of the transept under Clement VIII. Since, however, the plan is shown with columns all along the nave, notwithstanding the twenty replacement piers known to have been inserted after 1361, the plan must be taken as a survey interlaced with reconstructive features[3]. Nonetheless, it must not be discounted in our reconstruction. Another plan, by Francesco Contini, first published by Severano in 1630, was largely concerned with representing the medieval palace, which by then had disappeared[4]. For the basilica, Contini apparently based himself on the Archive plan, but he adds the positions of the four bronze columns below the triumphal arch and of some altars still extant at the time, while he reconstructs the location of others, presumably from the *Descriptio Ecclesiae Lateranensis* which goes by the name of John the Deacon. Otherwise Contini limits himself to the main outlines of the church.

Borromini's plans, sections and elevations are for the major part exact surveys done either by himself or by his collaborators and assistants to serve as a base for the rebuilding planned and under way. In them, new and old parts were distinguished, and often marked "*muro nuovo*" and "*muro vecchio*" or "*antico*", but obviously no distinction was made among the latter

[1] Panvinio, *De praecipuis basilicis*, 125; H. Egger, "Kardinal Antonio Martinez de Chaves und sein Grabmal...", *Miscellanea Ehrle*, II (*Studi e Testi*, 38) Rome, 1924, 415 ff.

[2] Below, 68.

[3] Professor Malmstrom interprets the Archive plan as a remodelling project, dating *ca.* 1560. We hope for an early publication of his proposal kindly communicated to us in a draft.

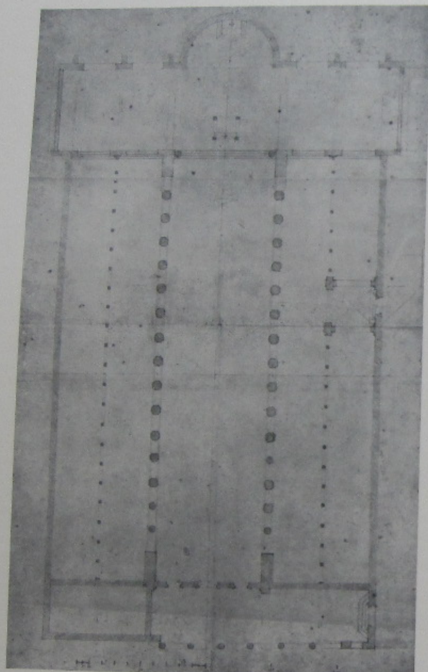
[4] Severano, *Sette Chiese*, 534; the plan was copied by Ciampini, *De sacris aedificiis*, pl. III.

between medieval and Constantinian elements. Outstanding is a large autograph plan in the Albertina, IT AZ 374, done in Borromini's unmistakable sharp-pencil technique and provided with a scale in *palmi romani* (fig. 57). The nave and aisles, Borromini's main concern at the time since they were the first parts to be affected by the program of remodelling, are rendered in minute detail. The dimensions as scaled off the plan, given its small size, necessarily contain a margin of error, but as regards major distances still subject to control this margin is not more than two per cent. Thus the total width including the outer aisle walls scales 257½ *palmi* (57.31 m.), as against the distance measured, 56.05 m.; a discrepancy due in part to an error of Borromini's in measuring the thickness of the aisle walls[1]. The span of the triumphal arch from pier to pier (disregarding the columns) scales 80 *palmi* (17.84 m.) as against 18.08 m. measured. The width of the openings from the aisles to the transept scales 26½ *palmi* (5.91 m.), as against 5.70 m. present-day measurement. The width of the (medieval) apse on Borromini's plan, 70 *palmi* or 15.61 m., is confirmed by Vespignani's measurement, 15.50 m.[2]. The width of the nave from column center to column center is 89½ *palmi* (19.96 m.) on the plan, as against 20.10 m. between the center lines of the foundation walls. All through, major dimensions scaled off Borromini's plan tally with the distances measured in the foundations, when due consideration is given to the differences between the foundation walls and the elements they carry above ground, set back as they are and not necessarily placed on the center line of the foundations. Only the total clear width of the nave and aisles, 246 *palmi* (54.85 m.) on the plan, as against 53.73 m. actual measurement shows a discrepancy, although less than two per cent. Finally, the width of the inner aisles, axially 42 *palmi* (9.36 m.) on the plan, as against 8.83 m. in the foundations, shows a minor difference.

By and large, Borromini's plan as well as his elevations and sections, can be relied on with but minor margins of error: the clear width of the nave, 83 *palmi* or 18.53 m.; of the inner aisles, 37½ *palmi* or 8.36 m.; of the outer aisles, 34 *palmi* or 7.58 m. The chapel of St. Thomas, though simplified by the omission of its apse, and the medieval narthex, extend in front of the façade. Three doors lead into the nave, the only entrances to the church. On either side, in line with the nave arcades, though much thinner, quarter cross piers project from the façade, the one to the north broken off, the other incorporated in the front wall of St. Thomas' chapel. The façade and aisle walls are quite thin, scaling 4½ *palmi* or 1.00 m.; incorrectly, since present measurements give 0.82-0.83 m. Twenty-one columns dividing the two south aisles were terminated on the east by a shallow pier and on the west by a half column with a respond projecting from the transept wall. Separating the north aisles were eighteen columns with the same terminating elements east and west — three columns having been replaced by a sixteenth century baldacchino construction leading into the south wing of the adjoining palace. Particular attention is paid to the nave supports. Starting from the transept piers Borromini noted on the south side a row of thirteen octagonal piers, then two columns and finally an end pier, projecting from the façade, 22 *palmi* long and 9 *palmi* wide (4.90 by 2.00 m.); one nave column protruded eastward from the next to last octagonal pier, the fourth support counting westward from the façade. On the north side, starting from the transept, he counted ten octagonal piers, then an eleventh which engulfed a column in its eastern half, then a column, two octagonal piers, another column and finally the long end pier projecting from the façade. The octagonal piers and the double-order arches of the nave arcade scale *ca.* 7 *palmi* (1.56 m.) wide, while the column shafts which were still *in situ*

[1] Below, 73; we figure the *palmo* at .223 m., the Roman foot at .2956 m. See also tabulations, below 150 ff., 285 f.

[2] Below, 70, 73.



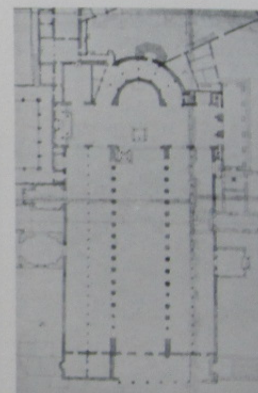
(IT AZ 374, Vienna, Albertina)

Fig. 57. S. Giovanni in Laterano. Borromini, plan of basilica, 1646.

were only 4½-5 *palmi* (1.00-1.10 m.) in diameter. The medieval nave wall rising from the arcades was thus 2-2½ *palmi* (0.44-0.56 m.) thicker than these shafts, a difference to be remembered when attempting a reconstruction of the Constantinian building. Likewise, it must be noted that the distances between the piers differ from those between the columns: 18½-19 *palmi* interaxially for the former, and 17-18 *palmi* for the latter (4.12-4.23 m. as against 3.80-4.01 m.) [1].

In contrast to Borromini's plan of the nave and aisles on IT AZ 374, the parts delineated outside that area are apparently not a simple survey. The narthex, to be sure, Borromini rendered exactly, but in drawing the chapel of St. Thomas, to the left in front of the façade, he omitted the apse, the arcaded colonnade in its east wall and the dividing colonnade, then walled up [2]. These elements survived as late as the eighteenth century and are marked both on Rainaldi's plan, IT AZ 373, prepared for Borromini (fig. 58), and on an elevation of the façade and the palace (IT AZ 386; fig. 65), done by Borromini himself or in his workshop. He did mark, though, on IT AZ 374, projecting from the façade and lined up with the nave colonnades, two half piers provided with angle pilasters such as might support the springing of a groin vault with wall arches; the north pier was broken off but was clearly intended to continue east, the south pier was embedded in the façade of St. Thomas' chapel. The plan of the transept, on the other hand, differs widely from what Borromini must have seen. The northern arm is shown without the narthex of Sixtus V, the medieval door and the flanking towers. The apse wall is rendered semicircular, both inside and outside, while the polygonal exterior erected under Nicholas IV and preserved till 1878, and the ambulatory, are both missing. Instead, inside the transept end walls Borromini drew a thin lining, not more than 2½ *palmi*, 0.56 m., thick and in the west wall of each transept arm he marked two wide openings equal in width to those opposite linking the aisles with the transept; they are separated outside by wall spurs not terminated by an end-line. Neither of the spur walls corresponds to the medieval buttresses, nor do the openings to the transept windows. We have no explanation to offer for these features, but they might be a project for remodelling the western parts of the church.

Borromini's plan of the nave and aisles in IT AZ 374 was apparently incorporated in, or based on the survey of the Lateran complex prepared by Carlo Rainaldi (IT AZ 373; fig. 58). The lack of a scale and the cruder technique of the rendering, make



(IT AZ 373, Vienna, Albertina)

Fig. 58. S. Giovanni in Laterano. C. Rainaldi, Lateran complex, detail showing plan of basilica.

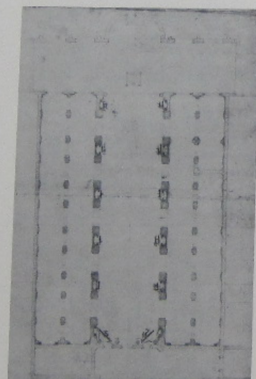
[1] The difference was first noted by Professor Malmstrom; see also *Testatina*, 143.

[2] PANVINIO, *De praecipuis basilicis*, 122; also RASPONI, 33 f.

Rainaldi's plan less valuable. However, its large size, 1.29 m. by 1.15 m., and its minute attention to detail contribute further evidence regarding the basilica as it stood until 1646, although not all of it is pertinent to our attempt to envisage Constantine's building. We point to Rainaldi's exact survey of the medieval ambulatory enveloping the apse; to the chapels projecting from the west of the transept; to those of sixteenth century date adjoining the aisles, the Cappella Massimo on the north, the Lancellotti and Santorio - Santaseverina chapels on the south, only the first of which survives; finally to the Chapel of St. Thomas with its small colonnade crossing the nave and its small apse, both mentioned by Panvinio[1], and, walled up in its east flank, a triple arcade carried by end piers and two columns[2].

The plans for the rebuilding project, in various stages, contained in the Spada volumes (Vat. lat. 11257, cc. 248 and 258 and Vat. lat. 11258, cc. 142, 146, 148), only confirm in detail the data given by Borromini's and Rainaldi's plans in Vienna (IT AZ 374 and 373). In particular Vat. lat. 11257, c. 258 (fig. 59) shows the outer walls of the old basilica, including the transept, in exactly the same form as the Vienna plans. It also shows, marking them as old, the eastern walls of the transept and the end piers, both east and west, of the nave arcade, in part incorporated into the newly projected piers and all clearly set off against the parts to be built anew. Marked in pencil, it notes, too, the aisle colonnades to be removed. Both Vat. lat. 11258, cc. 146 and 148 use the same basic plan[3]. Vat. lat. 11258, c. 142 (fig. 60) shows, in cursory form, the final project with the old walls, including a correct survey of the transept incorporated in it; it is obviously a workshop drawing. Finally, Vat. lat. 11257, c. 248, gives sketchily the northern half of the nave, the north aisles and the adjoining palace (fig. 61)[4]. The length of the nave and aisles is indicated: 332 *palmi* (74.03 m.), less than one per cent short of the figure measurable today, 74.60 m. It also provides heights for the outer and inner aisles, 46½ and 57 *palmi*, 10.37 and 12.71 m. respectively, possibly referring to the height of the sixteenth century arches leading into the transept and that of the cross-beams of the inner aisle.

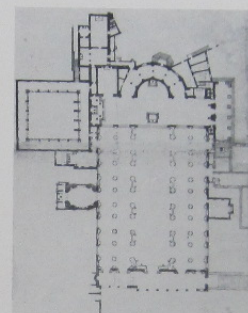
The eighteenth and nineteenth century surveys are of no interest to us. They represent the church as it was after Borromini's remodelling, obviously with its medieval transept, apse and ambulatory, but without indicating Constantinian elements. Exceptions are the surveys made by Vespignani in connection with his construction of the extended chancel and the concomitant excavations. One of



(Vat. lat. 11257, c. 258)

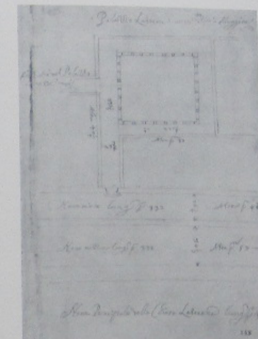
Fig. 59. S. Giovanni in Laterano. Borromini or workshop, plan of church.

[1] Panvinio, *De praecipuis basilicis*, 122.
[2] Above, 16.
[3] Portoghesi, *Saggi*, fig. 28.
[4] *Ibid.*, fig. 27.



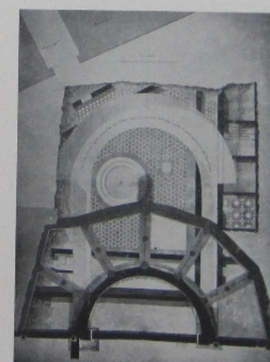
(Vat. lat. 11258, c. 142)

Fig. 60. S. Giovanni in Laterano. Borromini or workshop, plan of church.



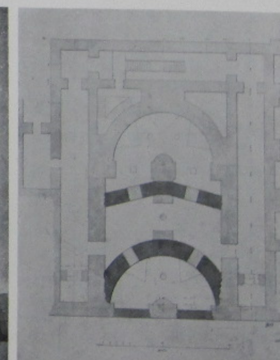
(Vat. lat. 11257, c. 248)

Fig. 61. S. Giovanni in Laterano. Borromini, sketchplan of north aisles and palace.



(Racc. Lanciani, vol. 43, 31335)

62a. S. Giovanni in Laterano. Vespignani, plan of medieval apse and ambulatory, mosaic of trapezoidal *domus* and foundations of new chancel, 1877.



(Racc. Lanciani, 31417)

Fig. 62b. S. Giovanni in Laterano. Vespignani or Busiri-Vici, plan of medieval apse and ambulatory, Constantinian apse foundation; and new chancel foundations.

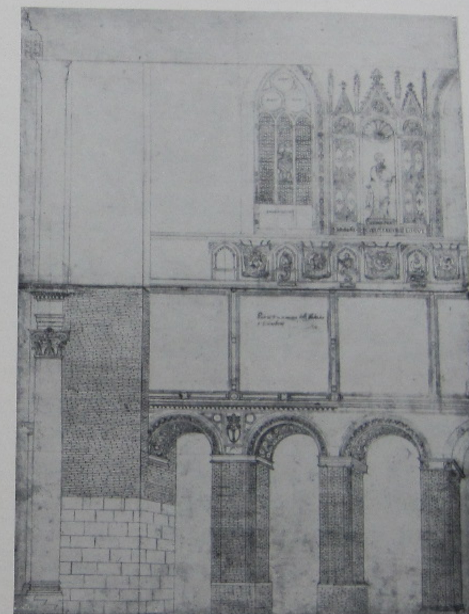
his plans (Pal. Venezia, Racc. Lanciani, vol. 43, no. 31335; our fig. 62a) shows the foundation of the Constantinian apse below the apse of Nicholas IV and its span wall; it is somewhat eccentric to the medieval curve. Inscribed "*curva inferiore dell'Abside Lateranense diversa di centro e di costruzione dalla curva superiore*", the wall is shown as 2.10 m. thick at the apex.

Another of Vespignani's drawings (Racc. Lanciani, vol. 43, no. 31417; our fig. 62b) surveys the work in progress on the foundations for the new chancel and incidentally provides precise measurements for the Constantinian apse foundation. It marks the old parts fallen victim to the new construction: both springings of the apse; its outer shoulders to a distance of *ca.* 6.90 m. from the east face of the Severan wall carrying the chord wall; the ends and center of the chord wall, and the foundations of the medieval ambulatory except for the two sides of its polygon on either side of the center line. Half the apse opening appears to be 7.85 m. wide — 7.15 m. given by the draughtsman in figures plus 0.70 m. scaled off — the whole opening therefore being 15.70 m. wide; the apse foundation scales 2.35 m., and the Severan wall along its chord 1.20 m. in thickness.

b) Elevations and sections.

All preserved elevations and sections which record the basilica at the beginning of and during the remodelling started in 1646 were done by Borromini or his assistants and all except one are in the Albertina in Vienna; the exception, a part elevation of the nave, is in Berlin (Staatl. Museen, Kunstbibliothek, Hdz. 4467). The drawing is a large sheet in pen and ink, possibly over pencil; it is provided with a scale of 40 *palmi*, but only the first 10 *palmi* are clearly marked (fig. 63). It shows the three and a half westernmost bays of the nave wall to the north: the arcades on piers, the surmounting upper wall, the clerestory with Gothic windows over the second and fourth bays, the tongue of the medieval end pier of the arcade adjoining the transept, the column under the triumphal arch, and, in section, the arch with its profiled fifteenth century lining, and the bottom of the nave ceiling. The accompanying inscription, "*questo è piu alto 4 (palmi ?) che non è quello della nave grande*" presumably refers to the adjoining ceiling of the transept. At its left-hand edge the drawing shows the half-pier and respond on the east transept wall. The nave piers carry square abaci or crude capitals with corner leaves; the arches are of two orders. The piers appear to be square with chamfered corners, rather than octagonal as on the plan IT AZ 374; they also differ from that plan in that the first pier from the west seems longer than the following ones and the end pier appears to be wider, towards both the nave and aisle, than either the nave piers or their arches: awkward traits raising the question whether indeed Borromini himself drew the architectural skeleton of the Berlin elevation[1]. The details refer to the medieval remodellings of the church. The nave piers as well as the upper part of the end pier are of brick; its lower part is constructed of heavy ashlar masonry, as is evident to this day. The clerestory windows contain Gothic tracery but their pointed heads are cut off by the ceiling of Pius IV; the first window contains the stained glass given by Pius V in 1568. The entire wall, from the spandrels of the piers up, carries the murals begun by Gentile da Fabriano under Martin V (whose arms are seen above the first pier) and continued by Pisanello, but never completed. This drawing is the only visual record of that decoration known to survive. In the context of the Constantinian basilica, however, the importance of the drawing lies in the dimensions which can be scaled off it: the nave piers are 30 *palmi* (6.69 m.) high; the top of the arcades is *ca.* 36 *palmi*

[1] Professor Malmstrom suggests that an elevation drawing was converted incompetently into a crude perpective drawing.

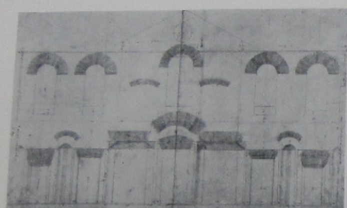


(Berlin, Staatliche Museen, Kunstbibliothek, Hdz. 4467)

Fig. 63. S. Giovanni in Laterano. Borromini or workshop, part of north nave wall, elevation.

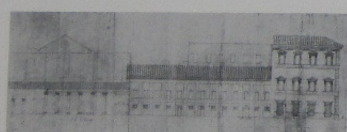
(8.03 m.); the column of the triumphal arch, resting on a pedestal 4 *palmi* (0.89 m.) high, has a shaft 41½ *palmi* (*ca.* 9.44 m.) high and 5 *palmi* (1.10 m.) in diameter; its total height, including the Ionic base and the composite capital, is 49 *palmi* (10.93 m.). The triumphal arch springs from a high entablature, 61½ *palmi* (13.71 m.) above the pavement; the clerestory windows start at 71 *palmi* and rise to 105 *palmi* (15.81 m. and 23.41 m. respectively); the total height of the nave in the Berlin elevation scales at 116 *palmi* (25.87 m.). The span of the nave arcades, finally, measures 12½-13½ *palmi* (2.78 - 3.01 m.). The distances of the piers, center to center, are 18½ - 19½ *palmi* (4.12 - 4.34 m.).

Likewise, in Borromini's surveys of the nave façade it is mostly the major dimensions he gives which fall within the scope of this study. Drawing IT AZ 385 shows the rear wall of the *avant-corps* planned by Borromini (fig. 64). Extending across the entire width of the nave and aisles and rising high above the aisles, this wall can still be seen from the rear, incorporated in Galilei's narthex, its huge openings walled up. Behind this wall emerges the medieval nave, its gable, largely rebuilt in the sixteenth century, pierced by an oculus. Borromini noted the height of the nave walls as 122½ *palmi* and its outer width, including the thickness of both walls, as 92½ *palmi* (20.63 m.); we measured 21.04 m. A second elevation, IT AZ 386 (fig. 65), showing the façade of the church and the east front of the palace, as far as it had been completed in Borromini's time, shows both the medieval narthex and the east flank of the Chapel of St. Thomas in front of the rear wall of the *avant-corps*; the chapel wall incorporated a triple arcade resting on two columns and end piers, but blocked.



(IT AZ 385, Vienna, Albertina)

Fig. 64. S. Giovanni in Laterano. Borromini, façade elevation, showing his rear wall and medieval gable.

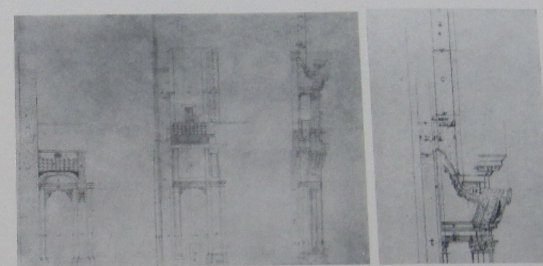


(IT AZ 386, Vienna, Albertina)

Fig. 65. S. Giovanni in Laterano. Borromini, elevation of façade and east wall of palace.

A longitudinal section, IT AZ 380, taken through the first bays of the inner and outer aisles and the nave façade, adds an occasional piece of information regarding the remains of the old church, as seen and incorporated by Borromini (fig. 66a). Reading from left to right, the sections through the outer and inner aisles indicate the thickness of the adjoining façade wall as 9½ *palmi* (2.12 m.); hence the wall must also comprise the rear wall of the *avant-corps* planned by Borromini, including its doors and, higher up, the blind openings above roof level. But the section of the inner aisle appears to distinguish within this total thickness a fragment,

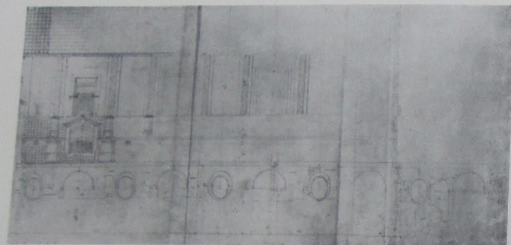
broken off and only 2 *palmi* (0.45 m.) wide and 41 *palmi* (9.14 m.) high, which perhaps represents the remains of the old façade. Moreover, in dissecting the façade (fig. 66b), Borromini marks a "*muro anticho*", apparently 4 *palmi* (0.89 m.) thick; resting above the balcony and projecting inwards above the portal and thus over 112 *palmi* (25 m.) from floor level, it is incorporated in the rear wall of his *avant-corps*, which is 8½ *palmi* (1.89 m.) thick. Pierced by the oculus, 15 *palmi* (3.35 m.) high, the wall rises to a total height of 146½ *palmi* (32.67 m.), and includes the whole height of the nave and part of the gable to the top of the oculus.



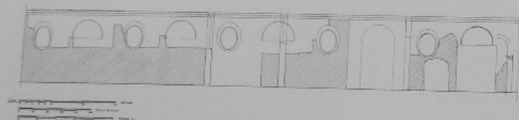
(IT AZ 380, Vienna, Albertina)

Fig. 66a, b. S. Giovanni in Laterano. Borromini, north aisle wall, elevation and detail.

Of yet greater interest in our study is an elevation of the north flank of the church, IT AZ 387 (figs. 67 a,b). Like the two façade drawings, it was executed when Borromini's remodelling was well under way, or had indeed been completed; the new clerestory is in place, as are the roofs over both inner and outer aisles, with dormer windows lighting the inner aisle and with oval and semicircular windows in the outer aisle wall. It was that wall, however, which Borromini surveyed in detail, from the west face of the newly built rear wall, prepared for his *avant-corps*, to the east face of the northeast tower, a distance of 315⅓ *palmi* (70.25 m.), this being the total of the increments he noted. The importance of the drawing, indeed, lies primarily in the notation of dimensions and in the careful marking of the old parts of the wall which were incorporated into the new construction as "*muro antico*" and "*muro nuovo*". Tracing his drawing, one gets the impression that the entire base part of the wall, to a height of 23 *palmi* (5.13 m.), was old; at some points the old work rises much higher, to the eaves line or nearly so, as for example at the eastern end, adjoining the west face of the façade, and at the opposite end, 35½ *palmi* (*ca.* 7.90 m.) from the medieval northeast tower. Between these extremities, parts rising high are scattered over the length of the aisle wall, like stumps emerging from the 23 *palmi* base line. One, to the left of the second oval window, *ca.* 126 *palmi* (28.09 m.) from the northeast tower, coincides with the fissure still preserved at that point. Another, just to the left of and below the second semicircular window counting from the east, and *ca.* 100 *palmi* (22.30 m.) from the west face of the *avant-corps* rear wall, was 5 *palmi* wide, but has now disappeared. A very tall stump, its eastern joint 255 *palmi*



(IT AZ 387, Vienna, Albertina)
Fig. 67a. S. Giovanni in Laterano. Borromini, north aisle wall, elevation.



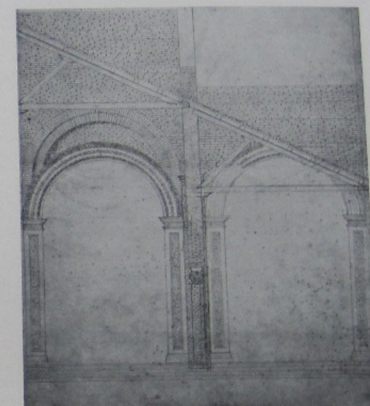
(drawing: Martellotti)
Fig. 67b. S. Giovanni in Laterano. Sketch showing old walls.

(56.86 m.) from the northeast tower, was as much as 7 *palmi* wide and rose 15¼ *palmi* above the 23 *palmi* level. The last one, only 3 *palmi* wide and rising 6 *palmi* above the 23 *palmi* level, had its west face 290 *palmi* (64.67 m.) from the northeast tower, at a point no longer visible. The significance of these stumps — they might mark intervals between the Constantinian windows — and of the 23 *palmi* level will be discussed later [1].

Of equal significance are a transverse section across the two north aisles and a part elevation of the aisle arcade. The transverse section, IT AZ 381, is taken across the two north aisles, facing west (fig. 68). Provided with a scale in *palmi*, it shows the medieval transept wall strengthened in the middle by a buttress; at the left edge of the drawing Borromini marked the northern face of the nave wall; to the right another line marks the inside face of the outer aisle wall, surmounted by the south wall of the northeast tower. In the lower part of the transept wall one notes its two arched openings, reached from the aisles by four steps and set off by sixteenth century ornament on their piers and archivolts. Above the left-hand opening rises a higher arch with a double soffit; it was originally open, as witness a Heemskerck drawing, to be discussed presently, and its apex reached to 54 *palmi* from the present floor [2]. From the second step, in the center between the two aisles, rises a respond applied to the transept wall and from this in turn projects a half-column, built in brick like the transept

[1] Below, 69.
[2] Malmstrom, 1973; see also below, 63 and fig. 75.

wall. The half-column, obviously terminating the arcade between the two aisles, stands directly below the buttress of the transept wall; it carries a Corinthian capital and this in turn bears a small cyma-curved impost block. From the impost block springs a stretch of brickwork, obviously the intrados of an arch, and this again is surmounted by a tall wall shown in section. Clearly, this is the termination of the arcade which separated the inner and outer aisles and of the dividing wall surmounting the arcade. A sloping roof covering both aisles, springs from the outer aisle wall, cuts across the top of the arcade wall and ends high up against the nave wall. Above the roof and surmounting the arcade wall another stretch of masonry emerges; it is delineated in much the same way as the soffit of the arcade below. We shall revert to this feature when discussing the reconstruction.

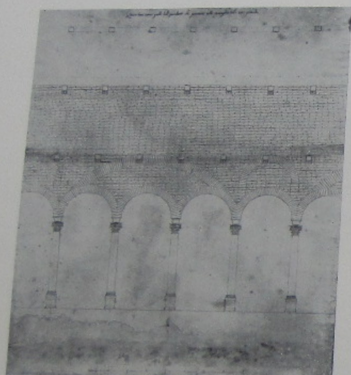


(IT AZ 381, Vienna, Albertina)
Fig. 68. S. Giovanni in Laterano. Borromini, north aisles, transverse section.

The transverse section is complemented by a part elevation of the aisle arcade, IT AZ X21 (fig. 69). Placing himself in one of the outer aisles—whether north or south is unknown—and facing inward, the draughtsman saw six bays of the arcade, those to left and right cut by one third. Further up, the draughtsman shows the high wall surmounting the arcade and in it a system of relieving arches; stilted arches cover the first and fifth arches, a segmental arch spans the second through the fourth arch, and another springs over the sixth arch. Still higher, two rows of brackets and one row of beam holes are noted. The lower row of brackets obviously carried the crossbeams of the outer aisle; the next row can only be the crossbeam brackets of the inner aisle, as the section shows them on the nave wall; the third is inscribed as receiving the rafters of the inner aisle, where they meet the nave wall — "*questi busci sono quelli dell'paradossi che posavano nella muraglia della nave grande*". Hence the draughtsman apparently changed places: first he stood in the outer aisle, looking inward; then in the inner aisle, facing inward towards the nave wall and drawing first the brackets of the crossbeams and then the rafter holes. The details of the arcade are noted with precision. The columns rise from high pedestals, elegantly profiled at foot and top and having plinths and Attic bases. The shafts carry composite capitals and these in turn support impost blocks, remarkably small, but of strongly marked cyma shape. From

the top of the blocks spring the brick voussoirs of the arches and from these again spring the relieving arches; the bottom row of brackets is inserted into their apices.

Taken together, the sectional and elevational drawings provide major and minor measurements scaled off, if with slight differences. The height of the outer aisle wall and the top of the corresponding brackets on the opposite wall scales 39 *palmi* (8.70 m.) in section and $40\frac{2}{3}$ *palmi* (9.04 m.) in the elevation; the discrepancy is resolved in favour of the transverse section, where the scaled-off width of the left-hand opening into the transept, 24 *palmi* (5.35 m.), comes close to the actual width, 5.38 m. The following measurements, taken from the elevation, should thus possibly be adjusted slightly downward: height of the column pedestals, $3\frac{1}{3}$ *palmi* (0.72 m.); of the bases and plinths, $1\frac{1}{3}$ *palmi* (0.30 m.); of the shafts $15\frac{1}{2}$ *palmi* (3.46 m.); of the capitals $2\frac{1}{2}$ *palmi* (0.55 m.). The pedestals at the foot of the columns were 3 *palmi* (0.67 m.) wide and presumably square. The impost blocks are $1\frac{1}{3}$ *palmi* (0.30 m.) high. The arches spring from a level $23\frac{2}{3}$ *palmi* (5.28 m.) above the present pavement and rise 30 *palmi* (6.67 m.) high, while the relieving arches, both stilted and segmental, reach a level of $40\frac{2}{3}$ *palmi* (9.04 m.). Of the rows of brackets, the first scales $38\frac{1}{2}$ *palmi* (8.54 m.) from the pavement to the bottom of the brackets, and $40\frac{1}{2}$ *palmi* (9.00 m.), to the top — a measurement confirmed by Borromini's notation on the sketch plan, Vat. lat. 11257, c. 248 (fig. 61); the second row scales 56 and 59 *palmi* (12.48 m. and 13.16 m.) — to be corrected in the elevation drawing to 57 *palmi* (12.71 m.) from the notation on the same plan; the third row, marking the rafter holes of the inner aisle, scales $74\frac{1}{3}$ and 76 *palmi* (16.57 and 16.94 m.) high on the nave wall in the elevation. In the section drawing, the corresponding levels scale, for the first row of brackets $37\frac{1}{2}$ and 39 *palmi* (8.36 and 8.69 m.) at bottom and top respectively; for the second row 56 and 57 *palmi* (12.48 and 12.70 m.); for the rafter holes 68 and $69\frac{1}{2}$ *palmi* (15.16 and 15.50 m.) The arch, as in the elevation drawing, springs from a level $23\frac{2}{3}$ *palmi* (5.28 m.) from the pavement and rises 30 *palmi* (6.68 m.) high. On the other hand, the heights for the brackets and rafter holes,



(IT AZ X 21, Vienna, Albertina)

Fig. 69. S. Giovanni in Laterano. Borromini, wall separating aisles, elevation.

0.33, 0.22 and 0.34 m., on the section drawing seem to us more acceptable than those given on the elevation drawing, 0.45, 0.45 and 0.37 m. — another element favouring the greater reliability of the former. The horizontal dimensions, too, can be scaled off. The clear width of the aisles in the transverse section are 34 *palmi* (7.58 m.) each; in the elevation, clear distances between the pedestals are $12\frac{1}{2}$ *palmi* (2.79 m.). The span of the arches in the elevation is 13 *palmi* (2.90 m.). The widths of the arch voussoirs scale 2 *palmi* (0.45 m.). The abaci of the impost blocks and the corresponding springings of the arches scale $2\frac{1}{2}$ *palmi* (0.56 m.) in the elevation and 3 *palmi* (0.67 m.) in the section drawing. But the elevation must be erroneous, witness the width of 0.66 m. measured on the impost block of the excavated spandrel described above (figs. 52, 53); these blocks, incidentally, were omitted on Borromini's surveys.

c) *Views.*

The earliest *vedute* of the Lateran church contribute little if anything to the reconstruction of the Constantinian structure. The view by the St. Francis master in Assisi [1], before 1300, in typical medieval fashion selects and reshuffles outstanding elements to characterize the building: the narthex, the façade (nearly all destroyed in the fresco), the campanile to the right. The copy in the predella of the *Stigmatization of St. Francis* [2], somewhat later, places part of the mosaic from the apse in the façade, shifting the oculus from the gable to the zone above the narthex. The drawing of the inner aisle higher than the outer would be important in our context if such a detail could be trusted.



(Sette Chiese, detail)

Fig. 70. S. Giovanni in Laterano. Lafréry, view of church and palace from north.

On early maps of Rome the church is characterized by its medieval transept, its towered north façade, its colonnaded narthex, its clerestory windows and its campanile rising over the north aisle, adjoining the façade; the whole condensed into a symbol [3]. Such abbreviated representations disappear in the sixteenth century, but then draughtsmen and mapmakers were more interested in the ruined medieval palace than in the church. Also, they preferred showing it from the north, since by that time the church was usually approached from that side. The north transept façade, with its Gothic portal and its twin towers emerging behind the terminating *cavetto*, attracted most attention: Heemskerck's beautiful drawing of 1536 gives a clear picture of the medieval palace, but for the church shows only the transept façade and the Gothic clerestory of the nave (fig. 2, above). Likewise, the *vedute* in the *Sette Chiese* and in nearly all the maps of Rome show the church from the north, focussing attention on the transept façade and on the crumbling palace (fig. 70). While the mural of Sixtus V in his Vatican Library (fig. 71) shows an ideal reconstruction of the palace, as do a number of engravings

[1] Smart, *The Assisi Problem and the Art of Giotto*, Oxford, 1971, 31f. with reference to Peter Murray, "Notes on some early Giotto sources", *Warburg and Courtauld Journal* XVI, 1953, 72f.

[2] Smart, *loc. cit.*

[3] Above, 7, Ancient Illustrations, in particular Cimabue's fresco in Assisi (Frutaz, *Piante*, pl. 141) and the derivatives of Giotto's fresco in Assisi, *Dream of Innocent III* (Smart, *loc. cit.*).

and drawings, presumably derived from that mural[1], the overall presentation is the same.

The only sixteenth century *veduta* from the east appears to be the one on Dupérac-Lafréry's map of 1577; naturally so, given the orientation of this map from the east rather than from the north (fig. 72). He shows the façade preceded by a narthex and containing three windows, in the nave and aisles respectively; he also shows an oculus in the gable and, far back, the medieval transept higher than the nave, as indeed it was[2], and the towered north façade. The view from the east is taken up in a more precise rendering in a *veduta* of major importance done prior to Borromini's remodelling campaign — a view of the Lateran complex, attributed to Gaspard Dughet, at Chatsworth, no. 154 (fig. 73)[3]. To the right the painter shows the palace, far from complete, more or less as Borromini still showed it in his Albertina drawing, IT AZ 386 (fig. 65). Adjoining it, one saw the basilica with its colonnaded narthex and adjacent Chapel of St. Thomas; emerging to the left is the dome of a chapel, presumably the Lancellotti chapel; in the middle is the nave façade. Rising above the narthex roof, it has three large blind round-headed arches, separated by narrow piers; the center arch was filled, though not completely, by a large round-arched window. A cornice separated this main section of the façade from another section, seemingly quite high, which merged into the gable with its oculus. Far back appears the transept with its two north towers, the interval being filled with structures of unknown date and function. The blind arches have been interpreted as belonging to the Constantinian building, and to this we shall



(Archivio Fotografico Musei Vaticani, III-20-13)

Fig. 71. S. Giovanni in Laterano. Lateran basilica and palace, view from north, Vatican, Biblioteca Sistina.



(Dupérac-Lafréry, Map of Rome)

Fig. 72. S. Giovanni in Laterano. Dupérac-Lafréry view from east, detail of map.

[1] For example the engraving by Louis Rouhier, published by RASPONI, following p. 386, and an anonymous pen and ink drawing in the Ambrosiana, Milan (Cod. Ambros. A178 inf.). An engraving by Petrus Laurus, *ca.* 1600 (?) (LAUER, 304, fig. 111) while not dependent on the Sistine mural, shows the Lateran complex from the same angle.

[2] Above, 22.

[3] A second *veduta*, likewise at Chatsworth, no. 159, attributed to Dughet and published by H. EGGER, *Veduten*, I, 1932, pl. 90, dates in our opinion after 1650: it already shows the rear wall built by Borromini for the projected *avant-corps*, adds a number of phantasy elements, such as a Romanesque campanile, and omits others still extant, such as the towers flanking the north façade.

revert. The same features are seen in a representation of the façade contained in a medallion which forms part of the decoration of the Lateran Baptistery, painted shortly before 1644 (fig. 74)[1]. This version differs from the Chatsworth painting in that the arches of the façade have re-entrant double jambs and string courses; that oculi are inserted into the blind arches, those on either side smaller than the central one; and that a cornice on brackets separates the main part of the façade from the raised walls supporting the gable. The roof of the aisles, not visible in the Chatsworth view, is also shown.

Only three *vedute* have survived relating to the interior prior to Borromini's rebuilding capaign. Professor Malmstrom has identified a drawing of Heemskerck's as a view looking from the medieval ambulatory into the north transept and beyond into the north aisles and has pointed out the decisive elements (fig. 75)[2]. Salient in our context are the arched openings which connect the transept and aisles, the inner opening being much the higher, thus clarifying Borromini's transverse section, IT AZ 381[3]; a faint horizontal line above the aisle arcade, possibly marks the revetment and corresponds with the archaeological evidence previously discussed[4]. (The presence of columns in the openings, incidentally, confirms the evidence provided by the Archive Plan). Of later interior views, one dating from *ca.* 1600, perhaps from the circle of Ligozzi, is contained in a fresco formerly in the cloister of Ognissanti in Florence (fig. 76)[5]. It shows the opening arch



(The Trustees of the Chatsworth Settlement)

Fig. 73. S. Giovanni in Laterano. Dughet, view from east, Chatsworth.



(photo: V. Hoffmann)

Fig. 74. S. Giovanni in Laterano. East façade, medallion in Lateran Baptistery.

[1] We are obliged to Professor Volker Hoffmann for calling our attention to this medallion and providing us with a photograph.

[2] MALMSTROM, 1973.

[3] Above, 58 f.

[4] Above, 45 f.

[5] LAUER, 305, fig. 112, reproduces an engraving by Battista Panzera (1541 - after 1592) copied from the fresco.

of the apse and, across the space in front of it, four bronze columns. These were moved and re-used in the Altar of the Sacrament, built shortly before or in 1600. But they are mentioned as early as the late eleventh century by the first compiler of the *Descriptio Ecclesiae Lateranensis*, who saw them standing near the end of the nave — the transept we recall is medieval — between walls or piers presumably bearing, as we shall see, the rebuilding inscription of Sergius III of 911[1]. The perspective in the painting is faulty; we know that the columns in the sixteenth century stood just east of the triumphal arch, witness for instance Severano's plan[2]. The apse is depicted in rather crude perspective with a huge cornice and, above, four pairs of round-arched windows, each window divided by colonnettes, surmounted by roundels and set within deep triangular gabled openings. The reliquary baldacchino appears far back in the apse. In the transept openings, on either side, an oblong pulpit its shown, that on the right resting on four columns, that on the left having four square pillars. Columns on high pedestals appear at the right edge in an undefined position, arbitrarily inserted (cut off in fig. 76).



(Huelsen-Egger, *Heemskerck*)

Fig. 75. S. Giovanni in Laterano. Heemskerck, interior view across transept into north aisles.



(photo: Pont. Comm. di Arch. Sacra)

Fig. 76. S. Giovanni in Laterano. Ligozzi (?), interior of transept and apse, with bronze columns, Florence, formerly Ognissanti, cloister.

Of greater importance is the often quoted view of the interior which decorates the aisle wall of S. Martino ai Monti (fig. 77). Formerly attributed to Gaspard Dughet, it was really done by Filippo Gagliardi[3]. Paid for in 1651, after Borromini's rebuilding of the interior had been completed, it shows the nave and aisles, from the east. The nave, terminated by the triumphal arch, is flanked on the left by two aisles, the inner one higher; beyond is the transept and the apse. The nave arcades are carried on columns, all of the same reddish material, standing on plinths and Attic bases

[1] Below, 66 f.

[2] Above, 48; see also below, 66 f.

[3] ANN B. SUTHERLAND, "The Decoration of San Martino ai Monti," *Burlington Magazine* (1964), 58ff., 115ff. A painting, known to us from a photograph in the archives of the Pont. Commissione di Archeologia Sacra, PCAS 12311, is apparently a free copy of Gagliardi's mural, and of nineteenth century date.

and surmounted by a hodgepodge of composite, Corinthian and Ionic capitals. The upper walls are articulated by frescoes in squares, one to each bay; the Gothic windows of the clerestory, over the second, fourth and sixth arcade, likewise have square murals in the intervals. An open truss roof covers the nave. The aisles are separated from each other by an arcade resting on green speckled columns which rise from high, finely profiled pedestals and carry capitals, two of them composite, a third a Corinthian capital with inverted volutes of a type favored by Borromini. The higher inner aisle is lit by semicircular windows, set up high in the arcade wall, one above each arch, quite large and separated by notably narrow



(photo: Pont. Comm. di Arch. Sacra)

Fig. 77. S. Giovanni in Laterano. Gagliardi, interior view, reconstruction, S. Martino ai Monti.

spandrels; above the windows the wall rises higher still. Round-arched windows open in the wall of the outer aisle again, it seems, one to each bay.

Clearly, then, Gagliardi's fresco does not simply show the interior of the church as it was prior to Borromini's rebuilding. By that time the majority of the columns had long been replaced by brick piers and the nave was covered by the coffered ceiling of Pius IV. Rather, the painter has attempted to envisage the church as he believed it to have looked originally, working with elements which he knew existed, such as the columns along the nave and those supporting the aisle arcade. We shall discuss later whether or not the semicircular windows in the inner aisles also belonged to these elements.

3. Literary evidence.

The *Descriptio Lateranensis Ecclesiae* in its original version was composed shortly after 1073 or possibly between 1099 and 1118. It was brought up to date, in a second version, prior to 1118 and in a third in 1154-1159. A fourth version, with a dedicatory preface addressed to Alexander III (1159-1181) was compiled by Johannes Diaconus under the title *Liber de sanctis sanctorum*. A few later insertions appear to have been made at the time of Alexander IV (1254-1261)[1]. Notwithstanding this complex history, the book goes as a rule by the name of Johannes Diaconus. As is to be expected the *Descriptio* is not concerned with the structure of the church. An elogium of the old cathedral of Rome, refurbished in 1072 by Alexander II (and directed against upstart St. Peter's?) it focusses on the Lateran's pre-eminence; its legendary foundation by Constantine and consecration by Pope Sylvester; its relics, largely in defense of the Old Testament relics the church claimed to possess; its altars; its papal burials from the early tenth into the early eleventh century, extended in the later versions by a nearly continuous series from Paschal II in 1118 to Lucius II in 1145. Even more prominently the *Descriptio* deals with the liturgical customs prevailing at services in the basilica. Only occasionally does the work provide a glimpse of the building and its plan, as it existed before the transept was built. An altar of Mary Magdalene was in the choir of the canons, presumably in the nave, east of the High Altar. An old altar dedicated to Chrysantius and Daria still stood back in the apse "*retro sub absida*"[2]; but its relics were transferred by Innocent II (1130-1143) to a new altar "*...in ecclesiam beatae Dei genitricis Mariae et sancti Pancratii...quae est in dextero latere basilicae...*", that is to the south. This church of Saints Mary and Pancras must have been inside the basilica — indeed, a variant in the first version of the *Descriptio* has "*...in dextro latere infra ecclesiam oratorium et altare sancte...Marie et sancti Pancratii...*" — and we venture to identify it with the south aisle transept[3]. Whether the north aisle transept was dedicated to S. Maria de Reposo is an open question: a late insertion in the *Descriptio* places the tomb of Celestine III in the northern aisle "*iuxta sanctam Mariam de Reposo...*", not "*iuxta altare*". In the same context, the passage speaks of Alexander III being buried near the pulpit and near the exit to the palace, "*...ante pulpitum ecclesie iuxta viam quando imus ad curiam...*"; obviously this means the door near the west end of the outer south aisle and close to the aisle transept, which led to the palace stairs[4]. The tenth century papal tombs were apparently near the façade in the south aisle and nave; those of the first half of the twelfth century were in the eastward area of the south aisle; the late twelfth century popes were buried in the eastern area of the north aisle and the nave. In our context two passages are relevant to the rebuilding campaign of Sergius III (903-911). His dedicatory inscription on the interior façade of the nave had apparently disappeared by the time the first version of the *Descriptio* was compiled, "*...super...fores ecclesiae scriptum fuit...*", but it was known from older descriptions, long lost. His donation list, reported in Chapter 18 of the *Descriptio* — it was not part of the first version — was read "*...in epitafiis parietum hinc inde...iuxta columnas aeneas*". If we assume that the bronze columns occupied the site where they were seen in the late sixteenth century, albeit raised to the level of the transept,

[1] C. Vogel, "La "*Descriptio Ecclesiae Lateranensis*" du Diacre Jean", *Mélanges en honneur de Monseigneur Michel Andrieu*, Strasbourg, 1956, 457 ff.; Valentini-Zucchetti, *Codice Topografico*, II, 319 ff. provide a good text with variants. It replaces the older editions by Mabillon (Migne, *PL.*, 194, 1543) and Lauer, 391 ff.

[2] Valentini-Zucchetti, *op. cit.*, III, 347, note 1, erroneously place it in the ambulatory. But that dates after 1291, see above, 21 f.

[3] *Not* outside the church, as Valentini-Zucchetti, *op. cit.*, 347, note 1.

[4] See plan of palace, e.g. Ciampini, *De Sacris Aedificiis*, pl. III.

the list could have been on the nave walls, near the High Altar. In that case, though, the inscriptions, more than two hundred words long, would have been hard to read, high above the nave colonnades and some 13 m. from the ground. Therefore we incline to favour a different interpretation of the text: the *parietes* were, we propose, long piers projecting on either side of the apse and terminating the western end of the nave colonnades; counterparts of the tongue piers, 22 *palmi*, (4.90 m.) long, which jutted out from the façade wall to form the eastern end piers of the colonnades[1]. Such piers, *hinc et inde* of the apse, would have provided sufficient space, in a position where they could be read, for the inscriptions of Sergius III. The bronze columns, within the terms of our hypothesis, would have stood near the end of the nave, in front of or indeed on the chord of the apse opening.

Panvinio, in his manuscript description of the church — it is contained in Book I, Chapter VII of *De sacrosancta Basilica Patriarchio et Baptisterio Lateranensi*, written in or after 1562[2] — speaks first of the narthex, the Thomas chapel, the oculus in the façade and the mosaic bust of Christ — the *Veronica* — flanked by two smaller oculi. He saw three doors opening into the nave; two smaller ones in the aisles, one the *porta santa* and the other in the chapel, were both blocked. Inscriptions referred to Eugene IV having repaired the narthex roof and to the opening of the *porta santa* in 1525 and 1550-1551. The frames of the nave doors were of marble and were old, "*...portarum antae veteres sunt et marmoree...*"; the wooden doors were a gift of Leo V (903). Inside, the nave was covered by a truss roof and a wooden ceiling, "*...cum tecto contignato et tabulis ligneis ornato...*"[3], obviously the predecessor of Pius IV and Pius V's coffered ceiling. The high walls, "*...altissimi parietes...*", rested on thirty stout columns and four piers, two on the façade and two in the rear, "...XXX *crassis columnis et quatuor parastatis, duabus frontem et totidem posticum*[4] *versus...*". But the walls, he continues, had been repaired (*scil.* down) to the entablature and the columns, except seven, enclosed in brick, had been transformed into an arcade carried by piers, "*...medianae parietes...quae nunc visuntur...usque ad peristylium*[5] *restitutae sunt...quod totum...cum columnis omnibus praeter septem, lateribus coctis vestitutum est et in arcum parastatis impositorum seriem redactum*". It is worth noting that Panvinio saw one nave column more than did Borromini eighty years later. Above the nave arcades Panvinio counted sixteen Gothic tracery windows, "*...fenestras more germanico oblongas cum cratibus sexdecim...*"; and on the north wall near the transept, seven bays long, he saw the incompleted murals of Pisanello, the story of John the Baptist, Prophets, Apostles and Church Fathers. On the interior façade of the nave he noted, presumably in place of the inscription of Sergius III, a mural of the Last Judgment, old and somewhat crude, "*...picturis antiquis et parum elegantibus exornata...Christi...novissimo die humanum genus iudicantis...*"; the pavement, he pointed out, had been laid at the expense of Martin V. The aisles were doubled on either side, the inner ones much lower than the nave, the outer ones but little lower than the former, "*...minores naves inter basilicae extremas parietes et medianae testudinis columnae duplices ex utraque parte...quarum proxima medianae ea longe humilior, rursum novissima parietibus adhaerens, altera paulo inferior...*". They were separated from one another by a wall resting on forty-two small columns with elegant capitals, the shafts of "precious green Lacedaemonian marble gayer than any other" — a quotation from Pliny[6] —,

[1] Above, 49.

[2] Vat. lat. 6110, published Panvinio-Lauer, 410 ff.

[3] Vat. lat. 6110, 48; Panvinio-Lauer, 432.

[4] The scribe of Vat. lat. 6110, 52, misread and Lauer printed "*porticum*"; but Panvinio's printed version, *De praecipuis basilicis*, 116, has the correct reading.

[5] This for "*epistylium*".

[6] Corsi, *Delle pietre antiche*, Rome, 1845, 206.

"*...Porticus...pariete duabus et quadraginta e preciosissimo omnibusque hilariore Lacedemonio viridi Tiberiaco marmore*[1], *parvis columnis, cum elegantissimis capitulis substentatis intersecantur...*"; these dividing walls also showed traces of paintings. In the remainder of this section the manuscript describes the transept, the apse and the ambulatory and thus is of but secondary relevance to our present study. However, in it Panvinio also points out the triumphal arch and its two "very thick columns" set up, he thought, by Alexander VI; underneath, contrary to the Ognissanti mural[2], he locates the four bronze columns raised to transept level, one of them still surmounted by a Corinthian capital, "*...duabus crassissimis columnis substentatis sub quo extant quatuor aureae columnae situatae supra gradus aliquot cum uno tantum capitulo Corinthio sitae...*". In the south transept Panvinio notes the organ loft of Cardinal Martinez de Chaves of Portugal filling the entire area. In the openings from the aisles to the transept he saw columns adjoining the piers, "*...minores quatuor arcus...sex parastatis et quatuor columnis cum capitulis corinthiis prope medias parastatas sitis fulciuntur*", and thus confirms the Lateran Archive plan (fig. 56); presumably they disappeared in the remodelling of the transept under Clement VIII. In 1646 Borromini no longer saw them. Finally, Panvinio describes a series of ten altars sheltered by canopies along the wall of the outer south aisle; they also appear on the Lateran Archive plan. But Panvinio adds an interesting piece of information: the canopies were carried by twenty small columns of green speckled marble, "*...columnellae e marmore viridi Tiberiaco sunt cum elegantissimis capitulis...*", the same marble apparently as was found in the columns separating the aisles from each other. One wonders where these twenty additional green columns, if indeed they were of the same type, could have come from.

Panvinio's notes in Vat. lat. 6781 are much more detailed than his final version, but they are almost impossible to decipher. Perhaps for this reason they have never, to our knowledge, been used as a source. However, we think it worthwhile to quote, albeit with lacunae, from a few passages (c. 244v f.) containing information not obtainable elsewhere. Panvinio mentions the end piers of the nave colonnades and especially refers to the remains of the nave entablature: "*Sustentantur nunc parietes maiores XXX columnis, XV XV hinc inde cum* (*duas*; cancelled) *4 magnis pilastris in fine utriusque parietis...columnis sex earum* (?) *cum Zophoro...*". He specifies that of the seven columns still *in situ*, three were on one side, four on the other, "*...nunc supersunt nisi 7 non vestiti, 3 hinc 4 illinc...*". He notes that in the mural of the Last Judgement, Christ's head was comparatively well preserved, "*...in caput incolumnis...*"; and he identifies in the fifteenth century murals, Church Fathers, Apostles, Evangelists and the forty-two minor prophets — apparently describing parts of the program not executed.

Panvinio's printed text reduces the manuscript version without adding much of relevance; on the contrary it introduces occasional errors such as the attribution to Eugene IV of all brick piers in the nave. Two details of interest, not contained in the manuscript version or in his *schede*, are his observation that the ground in front of the church was all covered by ruins, and his reference to four small columns carrying an inscribed entablature, possibly a spoil, in the Chapel of St. Thomas[3]. Nor did Ugonio contribute much of value either in his manuscript, Barb. lat. 1993, c. 63 ff. (new 67 ff.), and his *schede*, Barb. lat., 1994, c. 101 ff. (new 55 ff.), both published by Lauer[4], or in the printed text of his *Stationi*; except that in Barb. lat. 1993, c. 64 (new 68) he identifies the material of the column shafts in the nave as Numidian marble[5]

[1] Corsi, *op. cit.*, 208, when listing the various names of the "Lacedaemonian" *verde antico* does not mention or explain the term *Tiberiaco*; for the correct identification of the material, above, 18, note 2.
[2] Above, 63 f.
[3] Panvinio, *De praecipuis, basilicis* 121; see above, 16 and 52.
[4] Ugonio-Lauer, 576 ff.
[5] *Ibid.*, 576.

(*giallo antico*). But he apparently felt unsure; in the book he omitted identifying the material. Like Panvinio he gives the number of preserved nave columns as seven, adding that they were "*male intere*", in bad shape. In the aisles, he saw the columns of green marble; at the end of the nave he saw the triumphal arch of travertine and behind it, in the transept, the four bronze columns. Severano, too, as late as 1630, continued to report that seven nave columns were preserved; but he may have copied one of his predecessors.

Cardinal Cesare Rasponi was an eyewitness during the rebuilding of 1646-1650 and presumably was well informed by both Borromini and Virgilio Spada, who acted as middleman between the architect and Pope Innocent X. Hence the evidence provided by his *De Basilica et Patriarchio Lateranensi Libri Quattuor*, published in 1656, concerning the church both before and after the remodelling, is of particular value. He describes it on pp. 33 ff. and, more extensively, on pp. 79 ff., and we summarize the latter text. The columns of the old nave he defines as extraordinarily slender, "*...inusitatae proceritatis...*". Most of them, he says, while looking undamaged, had been weakened and were therefore encased in brick piers, except a few near the doors — on p. 37 he says more precisely four, "*quattuor exceptis*"; these were left to testify to the former grandeur of the basilica. (The two columns incorporated in piers, marked on Borromini's survey plan, Rasponi simply failed to count). For the same reason, Rasponi continues, the entablature and the wall over these columns remained in place. While the remainder of the nave walls rested on arches, built in brick as an underpinning for (or in place of; the text is ambiguous) the entablature: "*...columnae marmoreae inusitatae proceritatis, quibus laterales ecclesiae parietes innitebantur, quamvis ab ignis calamitate integrae in speciem viderentur, a veteribus illis restauratoribus sustinendo amplius tanto oneri haud satis idoneae sint iudicatae; quas idcirco lateritio opere conuestiendas, muniendasque censuere; paucis admodum exceptis, quarum integram formam testandae veteris magnificentiae gratia prope portas relinquere placuerat, nec aliam ob causam Epistilia quoque super eisdem intacta, murumque, ut antea sustinentia mansisse crediderim, cum reliqua murorum moles nullo lapideo, quod appareret, operi, sed arcubus lateritiis inter restaurandum exstructis trabeationi columnarum suppositis incumberet...*". Further, the walls of the nave as well as those over the arcades dividing the double aisles on either side were in poor shape: the north wall of the nave showed an overhang of *ca.* 0.75 m., the walls between the aisles were out of joint, "*...latus ecclesiae, quod a porta venientibus dexterum est* (*commotis credo eo loci fundamentis, columnisque debilitatis*) *ita media sui parte sese introrsus in ecclesiam proieceral, ut perpendiculum a summo pariete in pavimentum demissum ab ipsius parietis crepidine tribus ferme palmis, ac dimidio distans incideret...Nihilo vero firmior compages erat caeterorum parietum, quibus ecclesiae latitudo distinguebatur; praesertim eorum, qui minorum columnarum ordinibus erant impositi, namque laxatis eorum ubique iuncturis...*". To counteract the damage and to provide for the new piers, the foundation walls were reinforced and enlarged below the north nave wall as well as around the outer walls, "*...fundamenta haud quaquam oneri, quod latura erant paria ab exploratoribus reperta nova substructione confirmare, ac dilatare necesse fuit* (*id quod etiam per universum fere ecclesiae circuitum factum est*)*...*". Strengthening walls were placed outside and anchored to both nave walls, and the overhang was shaved off as far as possible, "*...ad posteriorem utriusque muri partem ductus est alter murus aequali pene cum priore crassitie ...eo autem excessu paulatim postea reciso, ac tota muri facie ad perpendiculum complanata....*". The aisle arcades were demolished and twenty-four of the thirty-six *verde antico* columns — Rasponi gives their measurements, nearly, "*...ferme...*", 16 *palmi* (3.57 m., in reality 3.50-3.52 m.) high and 2 *palmi* in diameter — were reused in the pier tabernacles which now shelter the Apostle statues. The aisles were fully rebuilt, the inner one higher than the outer and illuminated through windows of its own, "*...illud quoque commodi in se habet quod locum fenestris illuminando se-*

cundae Navis spatio necessarium praebet, qua fenestrarum, et luminis commoditate...". In the nave, finally, the ovals above the pier tabernacles, framed by palm fronds, were left empty to show the old, presumably Constantinian brickwork, "*...quibus in spatiis relicta est intacta Constantinianorum parietum antiqua facies, vetustatis memoria, et posteritatis erga ipsum pietate, ac Religione venerabilis...*".

In three publications between 1876 and 1886, the architect Andrea Busiri-Vici defended a project, submitted in different versions, for building a new choir and for that purpose moving the old apse and ambulatory of Nicholas IV some 20 m. further west. The project was abandoned after the foundations for the chancel and apse had been built, in favour of that executed by V. Vespignani, with a newly built apse enveloped by a rectangular ambulatory. The most important of Busiri-Vici's writings, *Progetti del Nuovo Coro*, 1878, contains a full and careful account of the finding of the Constantinian apse foundation, of the enveloping ambulatory, of the trapezoidal *domus* to the west with its mosaic courtyard, and of older houses explored below that house. Colini[1] has reprinted part of the report. Within the scope of our study the following items stand out: the foundation wall or *sottomuramento* of the apse was faced in brick; that of the ambulatory, or *portico leoniano* was built in small tufa stones. The former rested on the remains of a first century construction and on powdery volcanic soil, the latter on the mosaic pavement of the trapezoidal *domus*; hence, according to Busiri-Vici, the *domus* was of later date than the walls below the apse, the more so since below the mosaic he found walls of older structures in brick, in different positions, and cisterns revetted in *opus signinum*, both continuing inside the apse foundation. The apse, all of brick, was built with pozzolana mortar of extraordinary cohesion and strength, "*...di una adherenza e tenacità straordinaria...*"; it could be cut into blocks like stone and had a specific gravity higher than was customary in brick walls. He also speaks of foundations "*...di opera incerta...*", composed of fragments of ancient marble, among them reliefs, cornices and even the torso of a male statue; evidently he means the foundation walls of the nave at the springing of the apse, or below the end wall of the inner south aisle[2]. Reporting on a sounding made to a depth of 8 m. below the mosaic of the trapezoidal *domus* and 15.45 m. below the pavement of the church, "*...a metri 8 di profondità dal livello del mosaico e metri 15.45 dal pavimento della chiesa...*", he gives by implication the level of the mosaic and with it the level of the visible footings of the apse and ambulatory foundations, 7.45 m. below church level. A later passage[3] appears to suggest as his point of reference the level of the transept rather than that of the nave: the Baptistery, he says, was 4.50 m. below the level of the transept and 2.05 m. above that of the mosaic, again totalling 7.45 m. To adjust the figures to the nave level, our own point of reference, the height of the transept pavement over the nave, 0.73 m., should be deducted from 7.45 m., arriving at a level of the apse footing of 6.75 m. below the present nave pavement. But there is an error somewhere in Busiri-Vici's figures; for the present measurement is in fact 7.53 m. below nave level. Coins found during the excavations extend from Hadrian to Constans and Constantine, but they tell little since the report does not indicate their location, whether below or above the mosaic. However, Busiri-Vici points out a further element relevant to our study: he says the apse foundation was in the open to its full height until the ambulatory was built — to him, under Leo I — "*...totalmente scoperta fino al mosaico reportandovisi successivamente le terre...per formare il*

[1] COLINI, *Celio*, 350, note 68.
[2] Above, 34.
[3] BUSIRI-VICI, *Progetti*, 18.

praticabile del ...portico..."[1]. This later fill, he continues, explains the burial of some columns in the building behind the apse (the *domus*?) and the (need for) steps descending to the Baptistery.

The largest portion of Busiri-Vici's pamphlet naturally deals with his various projects for the new chancel. Only incidentally does he speak of the medieval ambulatory, noting *inter alia* that its vaults blocked the lower 1.06 m. of the apse windows, and describing the foundations of the colonnade subdividing its interior. Still, in our context it is of interest to note that all projects, even the latest submitted, proposed huge vaults to carry the floor of the new chancel and the rebuilt apse and ambulatory; vaults intended "to make accessible the remains uncovered", including the objects found, and to allow, if desired, a communication "between the space below the apse and the crypt under the High Altar of Urban V of 1367"[2]. Twenty-five plates were to accompany the report and three of these were printed in 1886. They show respectively the old apse, with the "*portico leoniano*", moved west to terminate the new chancel, the metal truss-roof and ceiling to go over the chancel, "*...cavaletto artistico in ferro con sua copertura e soffitta*", and the longitudinal section of the new chancel as projected[3].

F. RECONSTRUCTION

A graphic reconstruction of the Constantinian basilica at the Lateran must rest for the overall plan and for the elevation of the aisles jointly on the fragmentary remains preserved and on Borromini's survey drawings. For the elevation of the nave we have to rely on the eastern end pier of the nave colonnade, the only element of the nave surviving; on calculations based on the elements ascertained previously in the aisles; on Borromini's drawing of the nave elevation, and on the remains of the medieval nave still visible in the roof space; on some early *vedute*; and on analogies with other Constantinian buildings in Rome and elsewhere. Written descriptions of the church from the time of Borromini and earlier contribute minor, but often valuable data about the interior. This section, then, remains in part hypothetical, but the reconstruction of the ground plan of the church and the elevation of the aisles rests to a large extent on solid ground. Even there, however, two sources of possible error remain. On the one hand the parts preserved above ground level, such as the fragments of the aisle walls and of the north-eastern end pier of the nave colonnade, are known only from small stretches of masonry; on the other, most of the overall dimensions of the church can only be measured at foundation level and not between rising walls. The walls and colonnades were obviously set back on these foundations and the depth of the setbacks can only be estimated by deducting from the thickness of the foundation walls, 1.70 m., that of the rising walls, 0.82-0.83 m. in the aisles, 1.00 - 1.10 m. in the nave. The setback on either side of the foundation wall would thus average 0.30-0.35 m. in the nave, and 0.44 m. in the aisles, but the rising parts of the structure were not necessarily placed on the center line of the foundations. Finally, the medieval walls of the nave and transept at the Lateran, as Professor Malmstrom has observed, are

[1] BUSIRI-VICI, *Progetti*, *loc. cit.*
[2] *Ibid.*, 16.
[3] The plates, headed "*Il Laterano nel 1870 - principali disegni e opere del Professore Busiri, autore e primo direttore dei lavori,*" and dated June 30th, 1886, are in the Lanciani Collection of the Istituto Nazionale d'Archeologia e Storia dell'Arte, Palazzo Venezia, Vol. 43, fols. 15, 16 and 17 and numbered 31388, 31389 and 31390 respectively. Another set of prints shows the machinery planned for moving the old apse; two are illustrated in ACCASTO, FRATICELLI, and NICOLINI, *L'architettura di Roma capitale*, 1870-1970, Rome, 1971, 30ff.

sometimes as much as 0.65 m. away from the positions occupied by their Constantinian predecessors. Corrections thus become necessary, and in calculating them Professor Malmstrom has supplied valuable contributions which we gratefully incorporate. Concomitantly, the small scale of Borromini's surveys leaves a margin of error in establishing exact distances; however, where the measurements of the surviving archaeological elements can be compared with those scaled from Borromini's surveys, the differences rarely amount to more than one per cent.

1. The plan

The overall plan is established by the surviving foundation walls combined with Borromini's surveys: a nave terminated by an apse; inner aisles of equal length with the nave; a south aisle transept projecting from the inner aisle and the consequent shortened length of the outer aisle. Supposing the plan to have been symmetrical — and the symmetry of all other parts known favors this assumption — we feel entitled to envisage a corresponding aisle transept to the north and a shortened north aisle. The dimensions, reconstructed within the inevitable margins of error, are based on the archaeological and graphic evidence discussed above. The primary elements given are the foundation walls and those of the rising walls which are either preserved or can be determined by medieval walls surviving and rising apparently straight over their Constantinian predecessors: the aisle walls north and south [1]; the apse chord as determined by the east face of the Constantinian span wall, which in turn lines up with both the entrance to the nineteenth century chancel and the inner face of the west wall of the medieval transept [2]; finally, the position of the inner façade of the nave, marked as it is by the medieval gable seen in the roof space, which cannot but coincide with the inner Constantinian façade wall [3]. Likewise, the known thicknesses of the rising walls enter into the calculation: the aisle walls 0.82-0.83 m. [4]; and the upper walls of the nave, 1.10 m. or slightly less, this being the diameter of the nave columns as known from Borromini's plan IT AZ 374, from the two columns preserved at the triumphal arch, from the Berlin elevation and from the column fragment found in 1959 [5].

The length from the inner façade to the apse chord, based on these data at present measures 90.55 m. The total clear length increases when the apse is included; but its depth can only be calculated: the span wall is 0.90 m. thick, the apse at foundation level 7.90 m. deep; and the thickness of its wall rising from a foundation, 2.34 m. strong, can be calculated as 1.50 m., proportionate to the relation of the nave walls to their foundations, 1.10 m. as against 1.70 m. Hence the setback of the apse wall from its foundation would be 0.42 m. roughly, and the clear depth of the apse (0.90 + 7.90 + 0.42 =) 9.22 m. The total clear length of the nave from the façade to the apex of the apse would thus be 99.76 m. (337½ R. ft.).

The clear length of the inner aisle would have been slightly less than 90.55 m.: the west face of the foundations of its end wall lines up with the west face of the span wall; since the foundation of the aisle wall is presumably 1.70 m. thick, its east face probably stands 0.80 m. to the east of the corresponding face of the span wall. The rising end wall of the aisle, being

[1] Above, 39 ff.
[2] Above, 37.
[3] Above, 23.
[4] Above, 41, 49.
[5] Above, 44, 51, 56.

0.82-0.83 m. thick, presumably is set back on either side 0.47-0.48 m. from the foundation wall. Hence the clear length of the inner aisle is [(90.55-0.80=) 89.75 m. + 0.48]= 90.23 m., 306 R. ft. On Borromini's plan IT AZ 374, the corresponding distance from the façade to the west wall of the medieval transept (it sits on the western edge rather than on the center line of the Constantinian foundation, see pl. I) scales 404 *palmi* (90.10 m.), very close to the 90.23 m. measured at present.

The length of the shortened outer aisles has been calculated as follows by Professor Malmstrom:

> Distance from the façade wall to the eastern transept wall: measured as 74.23 m. near to the axis of the church.
> Distance from the façade wall to the aisle transept wall: this distance equals the distance from the façade to the medieval transept wall (74.23 m.) plus the theoretical distance between the east face of the transept wall and the east face of the original Constantinian aisle transept wall (0.65 m.). This theoretical distance is determined by adding the thickness of the medieval transept wall (1.00 m.) and the distance between it and the west face of the Constantinian foundation (1.00 m.), and then subtracting the distance between the west face of the foundation and the east face of the original Constantinian aisle transept rising wall (1.35 m.): i. e., 2.00 m. less 1.35 m. equals 0.65 m. Thus the total length of the Constantinian outer south aisles from the façade to the wall of the aisle transept was 74.88 m.

The measurements of the south aisle transept are known only at foundation level: 8.05 m. depth and 10.90 m. width. Assuming the customary setbacks of the rising walls proportionate to the strength of the bearing foundation walls — they are, one recalls, 1.70 m. east and west and 2.00 m. south — the clear width above ground would have been roughly 11.45 m., the clear depth 8.93 m., close to 30 R. ft.

The clear width of the entire church, nave and aisles combined, measures today 53.73 m.; including the walls of both outer aisles it is 55.38 m. On Borromini's plan IT AZ 374 the latter distance scales 257 *palmi* (57.31 m.). The discrepancy is caused in part by Borromini's making the aisle walls 5 *palmi* (1.11 m.) thick instead of the correct figure 0.82-0.83 m.; however, the clear width, scaled on the plan, 246 *palmi* (54.85 m.) is still 5 *palmi* (1.12 m.) off the true measurement and for this we have no explanation. Assuming our measurement to be correct, the width of the outer aisles above ground, as scaled from Borromini's surveys, is 34½ *palmi* (7.69 m. or 26 R. ft.). The inner aisles scale 34 *palmi* (7.58 m., 25½ R. ft.). But, as pointed out by Professor Malmstrom, this measurement requires adjustment. It is being taken from the dividing arcade to the outer face of the medieval nave wall, and the width of that wall corresponded to that of the octagonal piers, 7½ *palmi*, rather than to that of the original columns with a diameter of 4½ - 5 *palmi*. Hence, 1¼ - 1½ *palmi* (33 cm.) must be added to the 34 *palmi* measured by Borromini and the width of the inner aisle originally would have been 7.94 m., bringing the total close to 27 R. ft. Correspondingly, the clear width of the Constantinian nave, given its thinner walls, must have exceeded by 3 *palmi* (0.67 m.) that of the medieval nave; hence, 0.67 m. added to the 81 *palmi* (18.06 m.) measured by Borromini on IT AZ 374, give a clear width of 18.73 m. (63½ R. ft.) for the Constantinian nave. The total width of both aisles, including the thickness of the dividing wall, 0.78 m. or 3½ *palmi*, would originally have been 73½ *palmi* (16.39 m. or 55½ R. ft.). The apse, finally, along its chord in the Constantinian building would have been as wide as the thirteenth century apse which succeeded it; it scales 70 *palmi* (15.61 m.) on Borromini's plan, and 15.50 m. on Busiri-Vici's. It cannot be measured directly in the foundations and

the setback of the wall rising from the foundation fades out towards the springing. However, given all the evidence, including the distance in the foundations, 13.30 m., where they can be seen, 4.50 m. west of the opening, the correct figure ought to be near 15.60 m. (53 R. ft).

When the overall measurements in plan—above ground rather than in the foundations—of the Lateran basilica are compared with those of Old St. Peter's, what appear to be clear parallels are revealed. Major measurements of St. Peter's more often than not relate to those of the smaller church at the Lateran in a ratio of or near 6:5. Where at the Lateran the clear length of the nave from the inner façade wall to the chord of the apse was 306 R. ft., at St. Peter's the clear length of the nave plus the depth of the transept is slightly over 360 R. ft. The width of the two apses is 53 as against 60 R. ft., 5 to 5.7. Correspondingly, the clear width of the nave and aisles is 180 R. ft. at the Lateran and 212 R. ft. at St. Peter's, in a ratio just below 5:6. The clear width of both aisles combined, is 55 R. ft. at the Lateran as compared with 62 R. ft. at St. Peter's; and the width of the nave, 63 as against 80 R. ft., again relate to each other in an apuroximate ratio of 5: 6.

Few of the distances measured above ground or scaled on Borromini's plan can be converted into round figures of Roman feet and even less into moduli which multiplied would result in such round figures. At foundation level, on the other hand, such figures are easily obtained. The length, for instance, can be calculated as follows: depth of apse at foundation level, measured from the chord wall, 7.90 m.; thickness of chord wall, 0.90 m.; distance from the chord wall to and including the spur wall foundations projecting from the façade, *ca.* 95.75 m. If the length of the spur walls and the thickness of the façade foundations are deducted from this figure, the clear length of the church at foundation level results. The spur walls are roughly 4.20 m. long; the total length can be obtained only by adding to the clear combined length at foundation level of the apse and chord wall, 8.80 m., that of the nave, and transept measured in the roof spaces — 74.23 m. and 15.95 m. respectively — and deducting from the total, 98.98 m., the presumable inward projection of the façade foundation[1]. The latter was presumably 2.00 m. thick as against *ca.* 1.10 m. for the rising wall, analogous to the thickness of the upper nave walls. The projection thus would have been 0.45 m. and the total clear length in the foundations from the façade to the apex of the apse *ca.* 98.53 m. This figure, however, corresponds exactly to 333⅓ R. ft., one third of a thousand feet, and presumably a basic dimension intended by the builders. Similarly, 8.80 m., the combined depth of the apse and chord wall at foundation level, is a basic dimension, 30 R. ft. (8.87 m.). Thus, although left with an odd figure, 303⅓ R. ft. for the length of the nave, the builders retained it.

Measurements, then, were apparently taken at foundation level, starting from distances taken in the clear between the foundation walls as planned when the trenches were dug (fig. 78). The procedure is confirmed by the transverse measurements in the foundations. The clear width of the entire building from outer aisle wall to outer aisle wall in the foundations is arrived at by adding the clear width of the two outer aisles between foundation walls — but we can only approximate that width as roughly 7.00 m. —, of the two inner aisles and of the nave, plus the thickness of four foundation walls, those separating the aisles and those delimiting the nave: twice 7.00 m., totalling 14 m.; twice 7.13 m., totalling 14.26 m.; 18.40 m., the nave width; and four times 1.70 m., totalling 6.80 m. The whole amounts to 53.46 m., approximately 180 R. ft. (53.21 m.). This apparently was the basic measure. Once established, it was divided into the component parts of the building: a division, with distances both including the widths of the foundation trenches and taken between their center lines.

[1] This combination of measurements taken above and below ground is awkward, but unavoidable under the circumstances.

Thus the width from the outer edge of the outer foundation wall to the outer edge of the the nave wall is on either side close to 60 R. ft. (17.73 m.). It is composed of the width of the outer foundation wall, 1.70 m., of the outer aisle, *ca.* 7.00 m.; of the inner aisle, 7.13 m., and of the foundation separating the aisles, 1.70 m. Thus it amounts to 17.53 m. Subdivided again, the outer aisle from the outer edge of its outer foundation trench to the outer edge of the trench separating the aisles comes to 8.70 m.; that of the inner aisle from the same outer edge of the separating trench to the nave foundation wall to 8.83 m.; both figures correspond to 30 R. ft. or 8.86 m. This left for the nave, including its two foundation walls: 18.40 m. clear distance, plus twice 1.70 m., totalling 21.80 m.; an odd figure approaching 73 R. ft., 21.58 m. Like the clear length of the nave, its width was apparently accepted as what was left over, once the enveloping elements, aisles and apse, had been worked out with the basic modulus of thirty Roman feet. Even the length of the outer aisles plus the depth of the aisle transept including the separating wall fits into the system: the component parts, length of inner aisle, thickness of foundation wall and depth of aisle transept, 74.23 m. + 1.70 m. + 8.05 m., amounts to 83.98 m., 284 R. ft. close to nine and one half moduli of thirty feet.

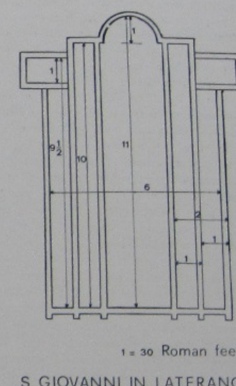


Fig. 78. S. Giovanni in Laterano. Constantinian Basilica, plan showing modulus.

Archaeological, graphic and descriptive evidence coincide regarding the numbers and position of the columns, which supported the arcades between the inner and outer aisles on the north and south, and the dimensions of the intercolumniations (pl. I; fig. 69, above). There were twenty-one columns on either side and correspondingly 22 intercolumniations, ending at the east wall of the aisle transepts. The column shafts of *verde antico* were 3.50 m., or 16 *palmi* (3.56 m.) high, to take Rasponi's figure, with a diameter of 2 *palmi* (0.44 m. or 1½ R. ft.). Details will be discussed later. The distance can be scaled on Borromini's plan and on his elevation of the dividing arcade: between 15 and 15½ *palmi* (3.35 - 3.45 m. or *ca.* 11½ R. ft.) from column axis to column axis; and 12-12½ *palmi* clear span of the arches (2.67-2.80 m. or 9 R. ft.). The radius calculated formerly as 1.10-1.20 m. from the scanty remains of the arcade springing found in 1934 has been correspondingly corrected into *ca.* 1.35 m. or slightly more. The westernmost intercolumniation of the arcade, closest to the medieval transept wall and thus carried to the west by the brick half-column applied to and integral with that wall, was shorter, *ca.* 9½ *palmi* (2.11 m.) clear span[1]. Originally,

[1] Above, 49.

however, that last arch would have been as wide as the others and sprung possibly from a bracket or pilaster on the wall of the aisle transept. Indeed, the rising wall of the aisle transept, to judge by the situation at the corresponding point south[1], would have risen *ca.* 70 cm. west of the line of the medieval transept wall. Thus the original clear span of the last arch would have been *ca.* 2.70 m., like the other arches of the arcade.

Of the nave supports in Borromini's time, fifteen on either side, the majority were brick piers of late medieval date. Only six of the original columns survived near the façade and two of these were half encased in later brick piers. Two tongue piers terminated the original colonnade, projecting from the façade; they are Constantinian, as witness the brickwork of the the one preserved in part to the north, and were 22 *palmi* long (4.90 m. or $16\frac{2}{3}$ R. ft.)[2]. As first noted by Professor Malmstrom, columns and octagonal piers do not have the same distances from one another. Of the four freestanding columns then surviving, the first two to the south give, we presume, the original distance of the columns, between 17 and 18 *palmi* (3.79-4.01 m. or 13-$13\frac{1}{2}$ R. ft.), from center to center of the columns. The same interaxial distance obtains between the fourth and fifth columns on the north, the latter encased in a brick pier; and fourfold and fivefold respectively, from the first columns on either side to the fourth and fifth, both engulfed by medieval piers. Given the diameter of the columns, 1.10 m., the span from column to column must have been between 2.69 m. and 2.91 m. (between 9 and 10 R. ft.). The piers, on the other hand, starting with the sixth support on either side, counting from the façade, are placed at distances somewhat greater than those of the columns; measured interaxially both on Borromini's plan and in his nave elevation, their distances result in *ca.* $18\frac{1}{2}$-19 *palmi* (4.12-4.23 m.). Hence the piers did not occupy exactly the sites of the former columns. In the Constantinian church sixteen, instead of fifteen supports, would have occupied the length of the nave from the façade to the transept. However, in Constantine's basilica the nave, one recalls, was carried across the area occupied by the medieval transept to the springing of the apse; a total length of 89.20 m., somewhat more than 300 R. ft. To calculate the number of columns originally flanking the nave on either side, we must deduct from the total length of 89.20 m., the lengths of both the tongue pier which projected from the façade and of a corresponding pier which jutted out at the opposite end of the colonnade, each 4.90 m. long. The assumption of such an end pier is justified on grounds both of statics and of symmetry and by the placing of the inscription of Sergius III on *parietes*, wall-like piers near the apse[3]. We thus arrive at 89.20 m., less twice 4.90 m., equal to 79.40 m. or nearly 270 R. ft. as the length available for the colonnade. Dividing this by the maximum interaxial distances of the columns, $13\frac{1}{2}$ R. ft., as measured on Borromini's plan, we arrive at twenty intercolumniations and nineteen columns. The alternative division into twenty-one intercolumniations with twenty columns, based on the minimum interaxial columnar distances measured on the plan, 17 *palmi* (3.79 m. or just less than 13 R. ft.) seems to us less likely.

Until Borromini's time three doorways led into the nave, but none opened into any of the four aisles. The jambs of all three openings were splayed inward thus causing the inner frames to be wider than those outside: 15 *palmi* as against *ca.* $12\frac{1}{2}$ *palmi* (3.34 m. as against 2.78 m.) for the center door; 11 *palmi* as against $7\frac{1}{2}$ *palmi* (2.45 m. as against 1.67 m.) for the flanking doors. The splaying of the jambs as well as the profiles of the frames, as shown on Borromini's survey plan IT AZ 373, suggest medieval remodelling of the door-

[1] Above, 75.
[2] Above, 41 f., 49.
[3] Above, 67.

ways. However, the fact that they were confined to the nave suggests Early Christian origin; medieval churches in Rome as a rule have doors both in the nave and in the aisles. Hence the three doors may well be Constantinian in plan. St. Peter's, too, seems to have been planned from the outset with three doors in the nave only. One might, however, consider as an alternative that the three doors at the Lateran (and at St. Peter's) took the place in the fifth century of an open arcaded façade such as was frequent in Roman church plans from Constantinian times into the fifth century: S. Sebastiano, S. Clemente, SS. Giovanni e Paolo, S. Vitale provide examples. In its second phase in the second quarter of the fifth century, S. Pietro in Vincoli shows the closing of the arcaded façade and the insertion of a door. Yet this alternative solution can be proposed for the Lateran basilica only as a hypothesis.

2. Elevation and sections

An attempt at reconstructing the elevation and sections of the Constantinian basilica must start from the three preserved fragments of the outer aisle walls, previously discussed: one each north and south, both close to the transept, the former containing a window and part of a side door, the latter containing the springing of a window arch. It must also take into consideration the original level of the Constantinian pavement, roughly 25 cm. or not quite one R. ft. below the present nave floor. The fragment of the wall to the north is visible to a height of 7.60 m., that to the south stands 8.50 m. above present nave level and therefore *ca.* 8.75 m. above the Constantinian pavement; we assume it to have terminated slightly above that point, 30 R. ft. (8.86 m.) high. Of the windows, the one on the north adjoining the transept is sufficiently well preserved: starting 14 R. ft. (4.15 m.) from the present, and thus 15 R. ft. from the Constantinian level, it was $5\frac{1}{2}$ R. ft. (1.60 m.) wide and 10 R. ft. (2.95 m.) high to the apex of the arch. The apex of its voussoir, 0.45 m. further up, must have risen 7.75 m. from the Constantinian level and *ca.* 1.13 m. below the eaves line. The window to the south apparently sat higher up in the aisle wall: its voussoir rose to 8.65 m. from the Constantinian level and thus almost touched the eaves line, probably only 0.21 m. above; the window, provided it had the same proportions as its counterpart to the north, $5\frac{1}{2}$ by 10 R. ft. clear width and height, must have started 4.90 m. from the present and thus *ca.* 5.15 m. ($17\frac{1}{2}$ R. ft.) from Constantinian floor level. We have no explanation for the difference except perhaps to assume different building crews working north and south.

The interior elevation of the aisles results from the known height of the outer aisle wall, 30 R. ft. originally, and the dimensions of the aisle arcade as surveyed by Borromini in section and in elevation. These data are supplemented by the fragment of one of the arch spandrels and by the measurements of the surviving *verde antico* column shafts, which are 3.50 m. and 3.52 m. high, not quite 12 R. ft.; the figure is confirmed by Rasponi's measurement, 16 *palmi* (3.568 m.)[1]. Elevation and transverse sections as surveyed by Borromini (figs. 68, 69) provide further details. The columns, rising from pedestals with classically profiled footings and tops, reached a total height of *ca.* 18 R. ft. (5.32 m.) above the Constantinian pavement, including plinths, bases and composite capitals[2]. By Borromini's time the footing of the pedestals was thus presumably buried some 25 cm. The arches sprang from small cyma-curved impost blocks at a level of 5.60 m. (19 R. ft.) and, given their span, *ca.* 2.66-2.80 m. (9 R. ft.), rose to a height of *ca.* 7.00 m. ($23\frac{1}{2}$ R. ft.) from Constantinian level, their voussoirs to *ca.*

[1] Rasponi, 83.
[2] We revise the figures given in *Tentativo*, 134.

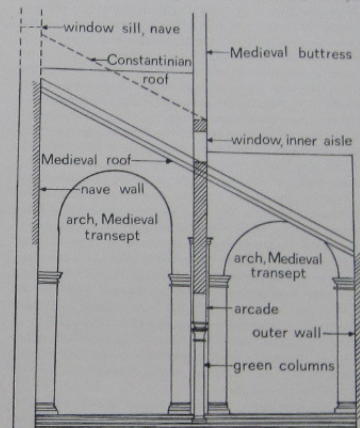
25 R. ft. From the arches a wall rose bare to a height of *ca.* 12.70 m. above the present floor, that is *ca.* 13.00 m. (44 R. ft.) above the Constantinian pavement. At that level it met the medieval roof which covered both aisles, sloping upward continuously from the top of the outer aisle wall to the side of the nave wall[1]. Relieving arches within the wall lightened the weight bearing down on the arcade; their apex reached the level of *ca.* 8.75 m. (*ca.* 30 R. ft.), this being the height of the outer walls as well (fig. 69). Concomitantly, the brackets designed to receive the crossbeams of the outer aisle were inserted at the level of the apex of the relieving arches. Again, correspondingly, the medieval crossbeams of the inner aisle were level with the top of the bare arcade wall, 44 R. ft. from the Constantinian pavement, while the medieval rafter holes of the inner aisle on the nave wall were *ca.* 17.20 m. (58 R. ft.) above the Constantinian nave and aisle floor level.

The roof over the two north aisles in Borromini's transverse section was medieval, as witness its traces seen to this day in the east wall of the medieval transept. The question is whether the Constantinian roof, too, continued across both aisles. This may have been the case. However, Gagliardi's interior view at S. Martino ai Monti — a visual reconstruction of the Constantinian church — shows the inner aisle rising above the roof of the outer one and lit by semicircular clerestory windows placed in the upper part of the arcade wall between the aisles (fig. 77). Indeed, in Borromini's transverse section (fig. 68) one sees at this very point a stretch of masonry scaling *ca.* 7⅓ *palmi* high (1.63 m. or 5½ R. ft.). This stretch admits alternative interpretations. It may mark the buttress, an interpretation supported by the fact that the section is taken through the westernmost bay of the aisles, rebuilt in the Middle Ages, and therefore excluding such a window. If this was the original arrangement, the Constantinian basilica would have carried a sloping roof jointly covering both aisles, just like the medieval roof Borromini saw. This is a possibility, but it poses several difficulties. Gagliardi's view shows a high inner aisle, lit by semicircular windows, and Gagliardi, as pointed out previously, must have been advised by someone with a sound knowledge of the old building, possibly Borromini himself. In accepting this alternative, then, one would have to assume that Borromini's transverse section was taken *à bayonette* and that Borromini cut through the outer aisle at a point further east, where traces of such a window could still have survived, and only then switched to the westernmost bay; his assistant did something similar when shifting from the outer to the inner aisle in drawing the elevation of the aisle arcade with three rows of brackets and rafter holes[2]. No such trace, to be sure, would show on Borromini's elevation drawing of the outer aisle wall, IT AZ 387 (fig. 67), since it was done after the new window zone of the inner aisle had been built[3]. On the other hand, in choosing the first alternative, the common roof over both aisles, one is confronted with another dilemma: Gagliardi and his advisor either invented the segmental windows out of whole cloth; or else he transferred them from Borromini's new building to his reconstructed view of the old one. We leave the question open at this point; but we shall return to it momentarily after discussing the elevation of the original nave colonnade[4].

The nave colonnade, indeed, can be envisaged with precision. Some of its columns remained standing near the façade in the sixteenth and seventeenth centuries; they were noted by Panvinio, Ugonio and Rasponi and were entered by Borromini and Rainaldi on their plans IT AZ 374 and 373. Their diameter scales on these surveys at *ca.* 5 *palmi* (1.10 m. or 3¾ R. ft.)

[1] See, however, below, 81.
[2] Above, 59.
[3] Above, 57 f.
[4] Below, 81 f.

and the fragment of a red granite shaft of just that diameter was found in our excavation campaign in 1959, in the transept area where, in the medieval rebuilding, the original nave colonnade fell victim to the construction of the new transept. The same diameter and material are encountered in the two columns which, since 1492 have carried the triumphal arch[1]. Thus we propose that they were removed from the original nave colonnade when the nave was rebuilt with octagonal brick piers[2], and were reused, after lying about for a century; or that some columns were replaced by piers only in the fifteenth century[3]. The measured height of these columns, including plinth, base and capital, is 11.07 m. for the south column, and this is approximately the measurement scaled off on the north column on Borromini's elevation in Berlin (fig. 63), 49 *palmi* (10.93 m., 37 R. ft.). The bases, Attic below the south column and 0.51 m. high, including the plinth, Ionic below the north column and, plinth included, 0.46 m. high, appear to be spoils; the capitals, both 1.10 m. high, composite and festooned with swags, date possibly from the late fifteenth century. But in our context this is less relevant than the height of the shafts, 9.46 m. south, and 9.40 m. north, figures supported by the Berlin drawing where the north shaft scales 9.44 m. The ratio of diameter to length, almost 1:9, is remarkably slender, and, indeed, Rasponi noted the "unusual slimness" of the columns, "*...inusitatae proceritatis...*". Panvinio's remark that the columns were stout, "*crassi*" is of course equally true, made as it was, in the context of the very high walls "*...altissimi parietes...*" they carried[4]. If the columns, then, belonged to the original nave colonnade, the latter would have risen, bases, plinths and capitals included, *ca.* 11 m. from the original nave floor. Very possibly, however, the thirty-eight original columns differed in material and size, and the capitals in



(Waddy, Lloyd)

Fig. 79. S. Giovanni in Laterano, North aisles, transverse section, reconstruction.

[1] Above, 44, 56.
[2] Malmstrom, 1967.
[3] Panvinio, indeed, attributed to Eugene IV wholesale the building of the brick piers; above, 68.
[4] Above, 67, 69.

type and height. Both Gagliardi's fresco and the analogy of St. Peter's suggest it and, as at St. Peter's, the differences in height would have been adjusted by raising plinths or burying them in the floor, or by using bases of varying height. However, the upper surfaces of the capitals, whether composite, Corinthian or Ionic and regardless of their individual sizes, must all have been at the same level so as to carry the architrave. This level in the Lateran basilica cannot have been less than 11.00 m. (roughly 37 R. ft.) from the Constantinian pavement, one half foot less than the corresponding level at St. Peter's, 10.88 m [1]. The long end pier of the north colonnade near the façade still rises 14.80 m. high or higher still, but it incorporates part of the upper nave wall and provides no information regarding the height of the colonnade.

Rasponi and Panvinio both state that the columns carried an entablature. Replaced by the medieval arcade and its brick piers, it remained *in situ* near the façade together with the remaining columns, "... *paucis (scil. columnis*; elsewhere "... *quattuor*") *admodum exceptis ... epistilia quoque super eisdem intacta* ..." [2]. Possibly the end of the entablature still survives, inserted into the westward end of the pier terminating the north colonnade, which remains walled up in the Thaddeus pier; but it is hidden, if indeed it exists, and we can only estimate the height of the entablature. On the other hand the reconstruction of the nave colonnade and of its entablature links up with that of the aisles in the Constantinian basilica, as outlined before. As surveyed by Borromini, the inner aisle up to the crossbeams was 57 *palmi*, that is 12.70 m. high from the present and therefore close to 13.00 m. from the Constantinian pavement; a level determined by the height of the outer aisle wall and the upward slope of the roof, 26.8 degrees, over that aisle. The brackets carrying the crossbeams of the inner aisle must have been inserted into the masonry of the nave wall. Since they are unlikely to have been placed directly on top of the stone beams of the entablature, they were probably set into the wall at least one and possibly several feet higher up. Their bottom level, 12.80 m. from the Constantinian pavement, therefore limits the height of the entablature. Given the height of the nave colonnade, 11.00 m., the entablature in this reconstruction would have a maximum height of not more than 1.70 m., and more likely less than 1.50 m. This seems to us too low and therefore too weak an entablature to support the weight of the upper nave walls, "*altissimi parietes*" [3]. Possibly the Lateran's builders took that risk. If so, the height of the inner aisle, as surveyed by Borromini, would have to be accepted as Constantinian, and its windows, as shown by Gagliardi, must be eliminated.

To us a different reconstruction seems more likely. The entablature of the nave colonnade, it seems to us, must have been heavier and therefore it must have been higher than 1.50 m. or even less. The entablature at St. Peter's was "... probably no lower than *ca.* 2.30 m. and no higher than *ca.* 2.80 m. ..." [4]. We assume a comparable height for the entablature at the Lateran, 2.50 m. or thereabouts (and therewith revise the figure 1.30-1.50 m. erroneously proposed some years ago [5]). Added to the height of the columns, 11 m. or 37 R. ft., an entablature 2.50 m. or over 8 R. ft. high would have its top surface more than 13.00 m. and as much as 13.50 m. from the Constantinian pavement, somewhere between 43½ and 46 R. ft. Given the span of the intercolumniations, 13½ R. ft. interaxial, and the weight of the upper wall bearing down, relieving arches incorporated into the nave wall would presumably have sprung from the entablature, as customary from antiquity through the Middle

[1] Below, 284.
[2] RASPONI, 69; see already Thelen, as quoted by H. SEDLMAYR, "Spätantike Wandsysteme," (*Bayerische Akademie der Wissenschaften, Sitzungsberichte 1958,7*) Munich, 1958, 31 and note 1.
[3] S. C. feels that the argument is based on insufficient data.
[4] Below, 248.
[5] *Tentativo*, 130, where also the entablature of St. Peter's was erroneously given as 1.38 m. high.

Ages in Rome; witness, S. Maria Maggiore in the fifth, S. Prassede in the ninth and the nave of S. Lorenzo f. l. m. in the twelfth century [1]. At the Lateran, such relieving arches, if semicircular, would have risen presumably 5½ - 6 R. ft. from the entablature—the clear span of the intercolumniation halved, 4 R. ft. plus 1½ - 2 R. ft. width of the voussoir; if stilted semicircles or segmental curves as over the aisle arcade, they could have risen higher still, 7 or 8 R. ft. The apex of the arches, then, could have reached a level between 49 and 54 R. ft.

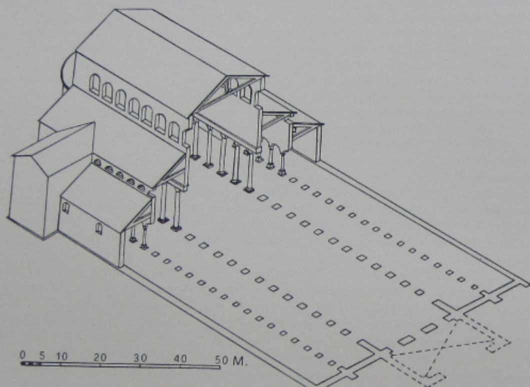
If the top of the entablature rose 43½ - 46 R. ft. from the Constantinian level, the inner aisle, too, must have risen higher than 13.00 m., 43½ R. ft., as measured by Borromini. The brackets carrying crossbeams are likely to have been set in the nave wall some distance above the entablature. Judging by the few buildings where such distances can be established, S. Prassede for instance, 5-6 R. ft. would not seem too much. Thus they might well have been inserted level with the apices of the relieving arches which, extending through the thickness of the nave wall, rose from the entablature of the nave colonnade 50 R. ft. or more from Constantinian floor level. (Such an arrangement, it seems, would have been customary when the Lateran basilica was built; correspondingly the brackets for the beams crossing the outer aisle were inserted level with the tops of the relieving arches.) Consequently, the inner aisle in the Constantinian basilica would have risen to at least 50 R. ft. (14.80 m.) or more likely somewhat higher. Its outer upper wall, rising as it did from the arcade between the two aisles, must have protruded, it seems to us, above the roof of the lower, outer aisle (fig. 79). Hence, that protruding upper wall would presumably have been pierced by windows, as they appear in Gagliardi's interior view (fig. 77). The stretch of brickwork shown in Borromini's transverse section of the aisles at that point (fig. 68) represents in our opinion the soffit of such a window. However, even if this stretch were meant to mark the buttress of the medieval transept [2], the Gagliardi view together with the heights calculated for the nave colonnade and its entablature indicate that the height of the Constantinian inner aisle was greater than that surveyed by Borromini.

A final argument supports the reconstruction of an inner aisle protruding above the roof of the outer aisle. As observed by Professor Malmstrom [3], Heemskerck's interior view (fig. 75) shows that the arch opening from the transept into the inner aisle was much higher than its counterpart leading to the outer aisle. On Borromini's transverse section IT AZ 281 (fig. 68), its apex scales 55 *palmi* (12.26 m., 41½ R. ft.) from the Constantinian floor. As late as the thirteenth century, when the transept was built, it was apparently necessary for the arch to be adjusted to the greater height of the adjoining inner aisle; an aisle therefore presumably provided with a lighting zone of its own. Apparently in a later medieval remodelling, possibly after the fire of 1361, the inner aisle was lowered and lost the windows by which it was originally lit.

The number, shape and size of these windows, however, remain in some doubt. Gagliardi's fresco at S. Martino ai Monti shows one over each bay of the aisle arcade, semicircular and nearly as wide as the span of the arches in that arcade (fig. 77). The spandrels between the windows as a result are unconvincingly narrow. Presumably, then, the windows were not quite so wide and not so close together. The soffit of a window as in Borromini's transverse section IT AZ 381 (fig. 68) —it surmounts, we think, the wall rising from the arcade between the aisles and protrudes above the roof of the lower aisle — scales 8 *palmi* (1.78 m., 6 R. ft.)

[1] Above, vol. II, 42f.; vol. III, 50, 249.
[2] Above, 78.
[3] MALMSTROM, 1973.

high. Thus the windows could not possibly have been semicircular; their bottom width, 12 R. ft., would have equalled the interaxial span of the bays in the supporting arcade. The windows, then, must have been considerably narrower, though still 6 R. ft. high. Perhaps, like the stilted relieving arches over the bays of the arcade, they were 11 *palmi*, (2.45 m.) or slightly over 8 R. ft. wide, 8 *palmi* or 6 R. ft. high. If so, their height plus that of their voussoirs, 0.45 m., provide a clue for the height of the wall into which the windows were set and thus for the height of the raised inner aisle in the Constantinian basilica. The window plus its voussoirs would have risen 7½ R. ft. over the roof of the outer aisle; and a few brick courses, perhaps 1 R. ft. high, placed over the apex of the voussoir would reach to the top of the wall. Adding



(Waddy; revised Lloyd)

Fig. 80. S. Giovanni in Laterano. Constantinian Basilica, reconstruction.

these 8½ R. ft. to the height of the inner aisle as surveyed by Borromini, 12.71 m. from present and *ca.* 13.00 m. (43½ R. ft.) from Constantinian nave level, brings the original height of the inner aisle to 52 R. ft. (fig. 79).

The height of the inner aisle, in turn, is interrelated with the nave elevation[1]. A roof sloping upward from the outer wall of the inner aisle, 52 R. ft. high, at the customary angle of 26.8 degrees and given the width of the aisle including its outer wall, 38½ *palmi* (8.58 m. or 29 R. ft.) from present level, would meet the nave wall 13 R. ft. higher up, 86 *palmi* (19.20 m., 65 R. ft.) from Constantinian floor level. This naturally is the minimum height of the window sills

[1] The following calculations and suggestions supersede those offered some years ago in *Tentativo*, 146 f.

in the clerestory of the nave: 15 R. ft. or 4.43 m. less than at St. Peter's, where the nave windows started 80 R. ft. or 23.64 m. from the floor[1].

The difference, though, fits into the system of ratios, approximately 5:6, found in comparing the measurements of the plans of the Lateran with those of St. Peter's[2]. As a working hypothesis we shall assume that the same system of proportions extends to the superstructure, keeping in mind the tentative character of this assumption. Proceeding on this hypothesis we take height and width of the apse at St. Peter's, *ca.* 75 and 60 R. ft. respectively, a relationship of five to four; the Lateran apse, being 53 R. ft. wide, should then have been just over 66 R. ft. high, but the prevailing ratios of 5:6, Lateran vs. St. Peter's, suggest a lower figure for its height, nearer 62½ R. ft. The Lateran nave, given the height of that at St. Peter's, 110 R. ft., at the ratio of 5:6 would have been 90 R. ft. or slightly higher. Consequently the height of the clerestory from the sills of its windows, 65 R. ft. from floor level, to the top of the nave wall would be 25 R. ft.; at St. Peter's this distance is 30 R. ft. A truss roof, presumably concealed or intended to be concealed by a coffered ceiling, would have spanned the nave, as customary in Constantinian monumental building.

The number and size of the clerestory windows likewise can be suggested only tentatively and in analogy with those at St. Peter's. If the Lateran clerestory started 15 R. ft. lower than that of St. Peter's and was 25 R. ft. high to the top of the nave wall, the size of the windows would have been proportionately less than at St. Peter's. The windows at St. Peter's were, we know, 4.91 m. by 3.23 m. (16½ by 11 R. ft.). At the ratio of 5:6 the Lateran windows might have been 13¾ R. ft. high and, keeping the proportion of height to width, as 3:2, they would have been 9 R. ft. wide. As customary over large arches, the voussoirs would have been doubled and 0.90 m. high. The apex of the voussoirs thus would have risen to not quite 82 R. ft. from nave level — 65 plus 13¾, plus 3. This would leave 8¼ R. ft. to the top of the nave wall, again relating to the comparable distance, 10½ R. ft., at St. Peter's at the proportion 5:6.

The number of windows, if calculated in analogy with St. Peter's where windows were placed only over every second bay of the nave, would have been small at the Lateran: only ten, given the number of twenty intercolumniations. However, an even number of windows over an even yet twice as large number of intercolumniations creates difficulties: the interaxial width of the intercolumniations, 13 or 13½ R. ft. at the Lateran, would make the stretches of wall between the windows 18 R. ft. long and thus deprive the nave of a good deal of light. Thus one wonders whether perhaps in the Constantinian Lateran, a window opened over each intercolumniation, as was the case at S. Paolo seventy years, or at S. Maria Maggiore a century later[3]. The window piers, to be sure, at the Lateran would be reduced to 4½ R. ft., exactly the width of those at S. Maria Maggiore; but, then, the windows there were smaller than they would have been at the Lateran. We had best leave the question in suspense.

The apse, too, apparently had windows: a passage in the biography of Leo III reports that he fitted the apse windows with stained glass, "*...fenestras de absida ex vitro diversis coloribus decoravit atque conclusit...*"[4]. There is no reason to deny their being Costantinian, the more so since no major rebuilding campaign is known from before the tenth century. The number and shape of the apse windows, on the other hand, remain unknown. There may have

[1] Below, 248 f.

[2] Above, 74.

[3] Below, fig. 128 and above, vol. III, 42 f., 51. It remains in doubt whether the nave windows from the outset were filled with stucco gratings as they were repaired five hundred years later by Leo III; above, 10, dig. 795-816.

[4] Above, *ibid.*, dig. 795-816.

been four as in the late thirteenth century apse at the Lateran and in the Constantinian apse at St. Peter's [1], but the question remains open.

The façade, obviously, must have had windows. Indeed, it has been suggested that the three huge arches seen both in Dughet's painting at Chatsworth (fig. 73) and in the roundel from the Lateran baptistery (fig. 74), antedating Borromini's building campaign, are Constantinian façade windows blocked in a medieval remodelling [2]. The soundings undertaken by Professor Hoffmann, as far as we can see, have so far brought to light only medieval rubble masonry, whether original or blocking. No wall face, window pier or jamb has been reached in the soundings and no Constantinian masonry has been identified. Thus the arches might well be blind arcades of medieval date with stepped frames such as abounded in medieval Rome and as they seem to be represented in the roundel at the Baptistery—an element pointed out in a letter by Professor Malmstrom. If, nonetheless, Constantinian windows were reflected by these arches, they would have been enormous — Professor Hoffmann refers to the *Basilica Nova Maxentii* — and much larger than those postulated in the clerestory walls of the Lateran church. As things stand, we think it prudent to await further factual data.

Obviously the number and size of the clerestory windows and the consequent lighting of the nave is linked to the number and size of the aisle windows. Those of the inner aisle we have discussed, as far as possible, and have presented our hypothesis; we think they were stilted, quite large, closely spaced and provided abundant light for the inner aisle. In the outer aisle we need not be hypothetical regarding the size of the windows. Topped by semicircular arches, they were 10 R. ft. high, 5 R. ft. wide and started north 15 R. ft., south 17½ R. ft. above the nave floor; one each, is preserved north and south adjoining the east wall of the transept. The apices of the windows, 24 R. ft. from the present and *ca.* 25 R. ft. from the Constantinian floor, were level with the arches of the aisle arcade. The number of windows, though, and their distribution along the wall is hard to ascertain. No traces of windows survive except the two at the western end of each aisle—we have eliminated from the argument what we formerly believed to be traces of another window in the north wall, 31.50 m. from the window in the northeast tower and thus corresponding to the tenth column rather than to the tenth aisle arcade, as we then erroneously thought [3]. Borromini's survey of the wall, IT AZ 387, helps but little. Large parts are marked *muro antico*, but these reach 26⅓ *palmi* from the nave level and sometimes higher, occasionally to the eaves of the roof (figs. 67a, b). Throughout the drawing, then, the *muri antichi* rise above the sill line of the window preserved in the northeast tower, 14 R. ft. or 18½ *palmi* above the present nave floor; nonetheless no ancient window is marked. Obviously they must have existed; but presumably they had been blocked with medieval brickwork; or the wall had been rebuilt in part in the Middle Ages. Borromini in making his survey did not differentiate between Early Christian and medieval remains; nor did he mark traces of Constantinian elements altered or blocked. Everything older than his own construction was *muro antico*. Thus we are thrown back on Gagliardi's fresco as our only source, keeping in mind its character as a reconstruction (fig. 77). He shows tall round arched windows, high above the floor, their apices higher than the capitals in the aisle arcade—not quite as high as they actually reached. But the overall

[1] Below, 255.

[2] Professor Volker Hoffmann is presenting this proposal in a paper to be published in the *Römisches Jahrbuch für Kunstgeschichte der Bibliotheca Hertziana* 16 (1975). He has kindly allowed us to peruse his manuscript in preparation and to discuss his proposal repeatedly with him.

[3] *Tentativo*, 146.

shape is correct; no wonder, since the window in the northeast tower was accessible to him and his advisor. The question whether a window corresponded to each bay in the aisle arcade, as the fresco has it, must remain unanswered. But we do not consider it impossible; the stretch of wall between two such windows would be 4 R. ft., sufficient given the width of the windows, 5 R. ft.

The entrance part of the basilica remains to be discussed. No archaeological evidence points to the existence of an atrium [1] and the literary evidence is vague. Hadrian I repaired the basilica together with its quadriporticus, atria and fonts, "... *basilicam Salvatoris ... iuxta Lateranense patriarchio cum quadriporticis suis atriisque et fontes ...*"; all in the plural and syntactically arranged to allow for relating the *quadriporticus* and *atria* to the palace rather than to the church [2]. On the other hand, Sergius II (844-847) "... performed ... excellent work outside the doors (of the basilica) by rendering visible to all the sacred thresholds formerly hidden to the people, by constructing arches from the ground which he also decorated with paintings" [3]. The passage is obscure. No atrium is mentioned, but some kind of construction appears to have risen in front of the church, hiding the doors, and was replaced in the ninth century by an arcade of sorts.

The graphic evidence may permit a hypothesis. Views and surveys of the façade starting with Borromini and his workshop, show the tenth century chapel of St. Thomas placed before the south end of the façade and continued north by the twelfth century narthex, which leaned against the northeast corner of the chapel. In the east flank of the chapel, facing outside, the observer noted a triple arcade on piers and columns, then blocked, but originally open. The arcade seems to have predated the chapel and to have been reused when this was built. Colini interprets it tentatively as the remains of a Constantinian atrium [4]. At this point, though, the date of the arcade can remain in suspense. At the same time, one recalls the two quarter-cross piers that inside the narthex projected from the façade, in line with the nave colonnades and their end piers, but slimmer than these: 6½ as against 8½ *palmi*, as it appears from Borromini's plan, IT AZ 374 (fig. 57). The pier to the north apparently continued as a wall, but was broken off; in 1644 the one to the south still continued as the north wall of St. Thomas' Chapel. Finally, the responds in the angles of the quarter-cross piers suggest that they originally carried the springing of groin vaults.

All this is mysterious. But could one, as an hypothesis, envisage the rectangular space delimited by the façade, the walls continuing the projecting piers and the fourth, open side, as a *propylon*, vaulted and sheltering the *sacra limina* (fig. 80)? If covered by a single groin vault, the room would have risen high—the vault alone to thirty feet, not counting perhaps as much for the supporting members. At sixty feet its top would have been nearly level with the sills of the clerestory windows as proposed in our reconstruction. Alternatively there could have been three vaults running east to west and—since there are no half-piers between the nave doors—carried by brackets projecting from the walls. In either case the front of the *propylon* could have been formed by a wall with arched entrances "hiding the *sacra limina*". In the ninth century the *propylon* would have been replaced by an arcade, the remains of which survived in the east flank of St. Thomas's chapel. But all this is highly hypothetical and it is presented here purely for discussion.

[1] Above, 10, dig. 772-795. See also S. S. ALEXANDER, "Studies in Constantinian Church Architecture," *RAC* 47 (1970) 281 ff., esp. 284 ff., who rightly states that there is neither proof nor proof to the contrary regarding a Constantinian atrium at the Lateran.

[2] *Ibid.*, 287 f. note 15.

[3] Above, 11, dig. 844-847.

[4] COLINI, *Celio*, 365, note 112.

3. Decoration

It remains to sum up what little can be said of the decoration and the liturgical arrangements of Constantine's basilica at the Lateran.

A few clues suggest what the decoration of the interior must have looked like. A small area of the nave pavement, excavated in 1934-38, is known from one photograph: large rectangular plaques of *giallo antico* are framed by strips of dark coloured marble (fig. 49). It remains unknown whether this precious floor in the nave (and outside the *solea*)[1] spread to the aisles as well; or whether, as frequently in early Greek churches, these subordinate parts were paved more simply, perhaps with monochrome mosaic or with brick tiles; or whether the chancel area was given an even more precious pavement.

The fastening hooks in the soffits and on the face of the one spandrel surviving from the aisle arcades, the impressions on its soffits of smallish plaques, and the thin slabs of yellow marble found in 1934 near the spandrel, all prove that the aisle arcade carried a marble revetment in its arches and on at least one face. A horizontal line above the arches, marked on Heemskerck's view of the interior, possibly suggests that the revetment ended there[2], presumably to be followed by painted decoration (fig. 75). The revetment of only the spandrel zone at S. Sabina offers a parallel. No traces of such a revetment survive on the opposite face of the spandrel. They may have disappeared; but it is equally possible that this face, presumably towards the outer aisle, was painted. It is unknown whether the nave walls also carried a marble revetment, perhaps combined with a painted decoration in the clerestory zone[3]. We think it very possible: the murals with Old and New Testament scenes in typological opposition, still seen by Hadrian I and then believed to be Constantinian, were presumably of fifth century date[4]; and interiors revetted in marble or decorated in a combination of revetment and painting abound from the third into the fifth century: examples include the hall now housing S. Croce in Gerusalemme[5]; the Aula Palatina in Trier[6]; the Basilica Nova[7]; the hall on the Forum, later transformed into the church of SS. Cosma e Damiano[8]; the Basilica of Junius Bassus[9]; the hall at the Porta Marina in Ostia[10]; and S. Sabina on the Aventine[11].

Under Constantine the half dome of the apse at the Lateran, like that of St. Peter's, seems to have been covered with gold foil, "...*ex auro trimita*..."[12]. Its figural decoration, added later, may have been donated between 428 and 430 by Fl. Felix and his wife, whose names were read *in throno* in the apse by the compiler of the Lorsch Sylloge I[13].

Nothing is known of a ceiling at the Lateran. To us it seems unlikely that the truss roof would have been left uncovered and we are inclined to envisage a coffered and possibly

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[1] Below, 87.

[2] MALMSTROM, 1973.

[3] Professor Malmstrom tentatively suggests that traces of plaster visible on the northeastern end pier of the nave colonnade might be Constantinian (fig. 48, left edge).

[4] Above, 10, dig. 772-93.

[5] COLINI, *Horti Spei Veteris* (*Atti Pont. Accad., Memorie* VIII, 3, 1955), 137 ff., esp. 164 ff.

[6] REUSCH, "Die Aula Palatina in Trier", *Germania* 33 (1955), 180 ff.

[7] MINOPRIO, "A restoration of the Basilica of Constantine", *P.B.S.R.*, 12 (1932), 1 ff.

[8] Above, vol. I, 137 ff., esp. fig. 85.

[9] ENKING, *S. Andrea Catabarbara... (Chiese Illustrate*, 83) Rome, 1964, 18 ff.; BECATTI, *Scavi di Ostia*, Rome, 1969, vol. VI, 181 ff.

[10] BECATTI, *ibid., passim.*

[11] Above, vol. IV, 72 ff.; DARSY, *Santa Sabina* (*Chiese Illustrate*, 63-64) Rome, 1961, esp. 103.

[12] See also below, 171. The original aniconic decoration of the apse vault with gold foil has been recognized by BUDDENSIEG, "Le coffret en ivoire de Pola...", *Cah. Arch.*, 10 (1959), 157 ff., esp. 172.

[13] Above, 10, dig. 429-30. For the attribution of a figural mosaic to Fl. Felix, see BUDDENSIEG, *op. cit.*, 177 ff., who sees its composition, an etimasia flanked by six apostles, reflected in one of the ivories on the Pola casket.

gilded ceiling, as customary in Constantinian church building and still known at the end of the fourth and in the fifth centuries, as witness: Old St. Peter's[1]; S. Paolo f. l. m.[2]; and Constantine's letter to Bishop Makarios regarding the construction of the basilica on Golgotha in Jerusalem[3]. Whether built or not, we think it likely that such a ceiling was planned at the Lateran.

The shimmering marble surfaces of the floor and walls, the gold foil in the apse and possibly the gilded ceiling must be seen together with the many dozens of lighting fixtures in precious metal with their hundreds of flickering lights; and these chandeliers and candlesticks in turn must be seen in the context of the liturgical arrangements of the church.

4. Liturgical features

Liturgical features, some Constantinian others possibly of fifth century date, are known like the decorative elements either from archaeological or from documentary evidence and like the former they are preserved at best in fragments.

Remains of a *solea*, the segregated pathway leading along the nave to the chancel and known so far only from later examples both in Rome and in the East, were found in the excavation campaign of 1934-38[4]. From the remains it can be reconstructed in general terms without difficulty: two parallel rows of marble sockets embedded in the Constantinian pavement of the nave held colonnettes or small piers; the foot of one was found to have remained in its socket. Between these colonnettes or piers, parapets must have been inserted. The distance between the two parallel rows of sockets, to judge by the photograph, appears to be 2.00-3.00 m. The reconstruction proposed by the excavators can be accepted without reservation, but the length of the *solea* remains in doubt: the stretch found is reported to have been located roughly halfway down the nave. To judge by the various photographs taken at the time[5], the location appears to have been rather east of the middle of the nave, west of the second Borromini pier, roughly 20 meters from the façade. The summary of the excavations[6] prepared by the Ufficio Tecnico del Vaticano suggests that the *solea* extended from the doors to the altar. It may, indeed, have started near the doors, as did the one found in the first church of S. Pietro in Vincoli, *ca.* 400, the next in date in Rome, but the *solea* at the Lateran may equally well have started further down the nave, as was the case in churches of slightly later date. Examples[8] in Rome include: the second church of S. Pietro in Vincoli, *ca.* 450; Sto. Stefano in Via Latina, built at the same time; S. Clemente, 533-535; S. Marco, perhaps between 550 and 650. Examples in the East, to give only three, are Pisidian Antioch, *ca.* 381[9], the second Menas basilica, *ca.* 490[10], and Justinian's H. Sophia in Constantinople, after 558, if not already by 532-537[11]. Obviously at the Lateran, as elsewhere,

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[1] Below, 174, dig. 625-638.

[2] Below, 98, dig. 395-462/3; 155.

[3] EUSEBIUS, *Vita Constantini*, III, 30 ff., ed. I. HEIKEL, (*GCS7*), Leipzig, 1902, 91 ff.

[4] Above, 43 f.

[5] P. C. A. S., 012570, 012571; our figs. 50, 51.

[6] RELAZIONE, 1938, as above, 44.

[7] Above, vol. III, 220 f.

[8] MATHEWS, "An early Roman chancel arrangement...", *RAC* 38 (1962), 73 ff.

[9] KITZINGER, "A fourth century mosaic floor in Pisidian Antioch", *Mélanges Arif Müfid Mansel*, Ankara, 1974, 385 ff.

[10] SCHLÄGER, "Abu Mena...", *Mitt. Dtsch. Arch.Inst. Kairo* 19 (1963), 114 ff., and 20 (1965), 122 ff.

[11] MATHEWS, *The early churches of Constantinople*, University Park and London, 1971, 98 f., quoting Paul the Silentiary's poem, ed. P. FRIEDLAENDER, *Johannes von Gaza und Paulus Silentiarus*, Leipzig, 1912.

the *solea* ended at the chancel entrance. Its function was to enclose the path along which the bishop and clergy made their solemn entry from the door, through the length of the nave, to the altar.

A second liturgical feature, the *fastigium*, is known only from the summary of Constantine's donations incorporated in the *Liber Pontificalis* [1]. The list enumerates its components: the *fastigium* itself, of hammered silver weighing 2,225 lbs; a golden vault and a heavy golden chandelier with fifty lights below the *fastigium*, "...*cameram ex auro purissimo et farum ex auro purissimo qui pendet sub fastigium*..."; the figure of Christ on a folding chair, "...*in sella*...", in front and the twelve apostles with golden crowns, all figures five feet high and made of silver (hammered silver, given the low weight, only 120 and 90 lbs. respectively); at the back, facing the apse, Christ "...*in throno*...", enthroned and in His Glory, and four angels carrying spears; four golden crowns listed immediately afterwards may have hung over the angels' heads. The structure has been envisaged along two alternative lines: a gabled colonnaded screen sheltering the figures, the chandelier and the crowns hanging over them [2]; or — the term *fastigium* meaning a gable as well as the crown of a vault — a canopy similar to that at St. Peter's [3]. We incline towards the former reconstruction, because of the crowns which we envisage hanging over the angels and possibly over the apostles; the huge chandelier under the golden vault would have hung, we think, over the two figures of Christ, seated back to back. But we leave this question open. We also leave open the question of the huge bronze columns, clearly Roman spoils and, given their almost perfect state of preservation, presumably early acquisitions of the Lateran church. Their original function is unknown. Now flanking the Altar of the Sacrament, they rose in the sixteenth century right behind the triumphal arch, on the raised floor of the transept [4]; previously they appear to have stood between or near the elongated piers terminating the nave colonnades and flanking the apse [5] — the very site possibly occupied by Constantine's *fastigium*, as well as by its replacement donated by Valentinian III between 432 and 440 [6].

In our context, the shape of Constantine's *fastigium* is less important than its position. It is listed as the first item among his donations to the Lateran, followed by the gold foil of the apse vault and by seven silver altars, to which we shall revert. Since the figure of Christ enthroned "looked back" into the apse, the *fastigium* presumably stood somewhat forward, yet close to the apse since it is listed just before the apse vault. Possibly it stood where the bronze columns were seen in the eleventh century by the first compiler of the *Descriptio ecclesiae Lateranensis*, between and in any event near the projecting piers flanking the apse at the end of the nave colonnade. In any case it stood inside the chancel, between the apse and the altar; Christ the Teacher, "...*in sella*...", facing the altar and the congregation; Christ in glory, "...*in throno*...", presumably facing the bishop and clergy in the apse.

Notwithstanding the statement in the *Liber Pontificalis* [7], there could not have been seven altars in simultaneous use. Early Christianity knows only one altar in every church — *unum altare, una fides*. The other six altars had best be interpreted, we propose, as offering

[1] Above, 9 f., dig. end of 312 (?), and *LP*, I, 172.
[2] M. Teasdale Smith, "The Lateran fastigium...", *RAC*, 46 (1970), 149 ff.
[3] Below, 258. Dr. Ursula Nilgen, who proposes this reconstruction, believes the four bronze columns to have supported the canopy.
[4] Above, 19, 47 f.
[5] Above, 66 f.
[6] Above, 69 f., digs. end of 312 (?) and 432-440.
[7] Above, 9, dig. end of 312 (?). Klauser, "Die konstantinischen Altäre der Lateransbasilika", *R.Q. Schr.* 43 (1935) 179 ff. favoured an interpretation of the passage as referring to seven real altars.

tables [1]. Possibly the sixth century compiler of the *Liber Pontificalis* mistranslated an original *mensae* in the donation list as *altaria*, since *mensa* to him only meant 'altar'. Or could Constantine have donated seven portable altars, one for each day of the week ? — but this is unlikely. In any event, there was but one real altar and this must have stood inside the chancel, in front of the *fastigium* and possibly somewhat forward in the west end of the nave. Indeed, a huge chandelier carrying eighty lights in front of the altar, "...*ante altare*..." — note the singular! —, is listed not among the fittings of the chancel, as are the *fastigium*, the "seven altars" and all altar vessels, but as the first item under the heading "...*ornamentum in basilica*...". Thus we think it quite possible that Constantine's altar occupied the same site as the present High Altar. Altars in the earliest churches of Rome, as witness St. Peter's or S. Paolo f.l.m. and also in churches where the place was not determined by a martyr's grave, have rarely been moved from their original location, witness S. Maria Maggiore and S. Pietro in Vincoli.

An additional reason for our proposing this permanence of the altar site at the Lateran rests on the position of the present High Altar in line with the aisle transepts. They must be linked after all to the liturgy of the Mass. Therefore they must have been connected with and have been accessible from the chancel; and they are best explained as rooms designed to shelter vessels and books, that is as sacristies; or as spaces to receive the offerings of the faithful — *ad altare* in a broader sense. Very possibly they combined both functions. The six offering tables, Constantine's other *altaria*, may well have stood inside the aisle transepts, or possibly along their walls facing the inner aisles and thus inside the chancel, which would have extended from the nave into the aisles as it did in other early churches in Rome [2]. But this remains conjectural.

G. CHRONOLOGY

a) The Constantinian basilica

The foundation of the Lateran basilica must be placed early in Constantine's reign as emperor of the West. As has been pointed out long ago, the donations of real estate made by Constantine to churches of his foundation reflect his successive conquests of the various parts of the Empire [3]. His endowment of the Lateran, as listed in the *Liber Pontificalis* comprises only landed property close to Rome, in northern Campania, and perhaps in South Italy and Sicily: near Lauretum, Anzio, Ardea, Sessa Aurunca; and possibly near Catania and in Calabria, these last two being rather doubtful [4]. In any event, all these territories were solidly in Constantine's hands a few days after he had entered Rome on October 28, 312; by the time he endowed the Lateran Baptistery he could add gifts located in North Africa and on the Ionian islands, suggesting a *terminus in* or *post* 313. The basilica at the Lateran, then, was apparently his earliest church foundation. It may well be understood as an *ex voto* for the victory at *saxa rubra*, Ponte Milvio.

[1] See also the texts quoted by Klauser, *op. cit.*
[2] Mathews, *op. cit.*, *RAC* 38 (1962), 73 ff.
[3] A. Piganiol, *L'empereur Constantin*, Paris, 1932, 112 ff.; H. v. Schönebeck, *Beiträge zur Religionspolitik des Maxentius und Constantin* (*Klio*, Beiheft, 43) Leipzig, 1939, 88 ff.
[4] *LP* I, 173 f.; Duchesne, *ibid.*, 192, notes 40, 42, identifies the "*territorium Catenense*" with Catania and "*Trapea territorio Catenensi*" notwithstanding the location given, with a place, Tropea, in Calabria. We remain much in doubt.

Construction would not have started immediately. Demolishing the *castra equitum singularium* and filling in their basement rooms to prepare a platform for the church must have taken time. Quite possibly this preparatory phase occupied a longish period and construction proper began perhaps only after January 31, 314, when Sylvester became bishop of Rome. This would explain the insertion into his biography in the *Liber Pontificalis* of the foundation and endowment of the church[1]. However, work may have begun in 313 and the reference to the Lateran basilica in Sylvester's *vita* may be due to the general historical tendency of attributing to an outstanding figure acts or events occurring under his predecessors or successors; by the time the *Liber Pontificalis* was compiled, the Constantine-Sylvester legend was already being formed. Conversely, the attribution to Sylvester may be explained simply by his having consecrated the church and by his being the first bishop enthroned in it and to use it as his cathedral.

Construction need not have taken many years. The huge *Basilica Nova* with its time-consuming vaulting system was built and completely decorated in four or five years[2]; and we shall see that at St. Peter's construction and interior decoration were presumably completed in the course of six to eight years[3]. The Lateran basilica, being smaller than St. Peter's, might well have been built and finished within five or six years. Dates given for the consecration are numerous, varying from 315 to 324, but they are never based on any source[4]. The *Martyrologium Romanum* gives November 9 as the feast day of the basilica, "*Romae dedicatio Basilicae Salvatoris*"[5]. However, as pointed out by Lauer[6], the date occurs first in the second version of the *Descriptio Ecclesiae Lateranensis*, 1153-1154: "*Cuius dedicatio per totum orbem quinto idus novembris...celebratur...*"[7]. By that time, then, the tradition was well established, but we do not know how far back it went. It is certainly older than the twelfth century, but it does not occur in the early sacramentaries and martyrologia dating from the fifth to the ninth century. Is it, then, the date of a reconsecration after the rebuilding completed by Sergius III (904-911)[8]? This is possible, but it is equally possible that the tradition springs from a fourth century root. We leave the question open. In any event, no year is given. However, it is curious that in the reigns of Constantine and Sylvester, November 9 falls on a Sunday — since the Middle Ages the customary day for church consecrations — only four times: 312, 318, 329, 335[9]. The last two dates can be dispensed with: the period of construction from 313 or 314 would be too long. However, 318 would be a very plausible date for the consecration of the church. Or should we stress the choice of the word *dedicatio*, rather than *consecratio*, by the sources? *Dedicatio* in Roman legal language is the act of handing over or ceding — *dedere* — an object, be it real estate or something else, to a deity; the act of *consecratio* follows, once the object has been installed or the shrine, temple or whatever, has been built[10]. Is it possible, then, that November 9, 312, not quite two weeks after his conquest of Rome, was the day Constantine ceded to Christ the terrain on which the basilica was to be built and made the endowment for its future maintenance, *in servitio luminum*?

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[1] Lauer, communication, *Bulletin Société Nationale des Antiquaires de France* (1924), 261 ff., is of the opinion that the building was started not prior to the pontificate of Sylvester, elected January 31, 314.
[2] Lugli, *Monumenti antichi di Roma...*, I, Rome, 1931, 172.
[3] Below, 274 f.
[4] Lauer, *loc. cit.*
[5] *Martyrologium Romanum*, ed. C. Baronio, Venice, 1630, 659.
[6] Lauer, *loc. cit.*
[7] Lauer, 396.
[8] Lauer, as quoted above, note 1.
[9] Grotefend, *Zeitrechnung des deutschen Mittelalters und der Neuzeit*, I, Hannover, 1891 (reprinted Aalen, 1970, tables II and III).
[10] Völkl, *Die Kirchenstiftungen des Kaiser Konstantin im Lichte des römischen Sakralrechts* (*Arbeitsgemeinschaft...Nordrhein-Westfalen, Geisteswissenschaften*, 117), Cologne-Opladen, 1964.

b) Later rebuildings

An earthquake in 896 caused the nave of the church to collapse. The biography of Sergius III as well as his dedicatory inscriptions represent the damage as nearly a total loss[1]. Indeed, the epitaphs set up by him to record the rebuilding maintain, one, that all hope was lost for restoring the ancient ruins, "*...spes dum nulla foret vestigia prisca recondi...*", but he nonetheless rebuilt the church from top to bottom, "*...ad culmen...perduxit ima caespite...*"; the other, that he rebuilt it "*...ab imis...*". Such terms, one suspects, are best taken as laudatory exaggerations, customary in aulic language. In fact, other sources tend to limit the extent of the damage: the biography of Pope Stephen VI states that the church fell from the altar to the doors, "*... ab altare usque ad portas...*"[2]; in short, the nave collapsed — or part of it did; and only two years later one could already think of obtaining beams for the roof[3]. The front part of the nave near the façade remained standing, it would seem, until 1646-1650, witness the columns still *in situ*, and the lower parts (or perhaps the whole) of the façade presumably surviving. Likewise the west part of the nave, occupied by the chancel and altar, was apparently untouched by the damage, and consequently it is hardly by chance that Sergius' building inscriptions were placed near the apse and on the inner side of the façade wall. The collapse and rebuilding concerned the center bays of the nave, the very parts that caved in at S. Paolo in 1823 and, long before, in 442-443[4]. To be sure, some damage on the façade of the Lateran basilica may also have been repaired under Sergius III; but no trace has survived of his restoration campaign.

Repairs undertaken by pope Innocent II apparently concerned primarily the roof of the church and the campanile which then, and still in the early fifteenth century, rose "*ante ecclesiam*", over the first bay of the north aisle[5]. Major rebuilding at the Lateran is again recorded in the inscriptions of Nicholas IV[6]. They make it clear that work was executed on the façade and on the western parts of the structure, "*...Partem posteriorem et anteriorem ruinosas...a fundamentis reaedificari fecit...*". To that end, some ruined parts were pulled down and rebuilt, "*ante retroque levat destructa reformat et ornat...*". This had become necessary on account of the precarious conditions of the structure, "*...circumspicit huius ecclesiae certa iam dependere ruina...*". In addition to repairs, part of the church was newly built from the ground, "*...fundamentis partem componit ab imis...*" — presumably these were the transept and apse, the latter bearing Nicholas IV's mosaic and building inscriptions. The transept survives, albeit much altered, and the apse survived until a century ago. On the other hand, no sign has turned up so far of major late thirteenth century work in the nave, except perhaps in the lower parts of the façade gable. The construction of the medieval transept, needless to say, caused the destruction of the Constantinian apse — the footing of Nicholas IV's apse was placed directly over the foundation wall of the earlier one; the chancel part of Constantine's nave, comprising the five westernmost intercolumniations of the nave colonnades on the north and on the south, and the aisle transepts also had to give way. To link the transept to the remaining parts of the nave, two huge piers were built supporting a triumphal arch and serving as end piers for the remaining nave colonnades. At that time, too, a single roof covered both

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[1] Above, 11, digs. 891, 898, 904-911. For the full text of the inscriptions of Sergius III, see *Descriptio ecclesiae Lateranensis*, Lauer, 401 and Panvinio-Lauer, 432.
[2] Above, 11, dig. 896, *LP* II, 229.
[3] Above, *ibid.*, dig. 898.
[4] Below, 138, 162.
[5] Above, 12, digs. 1130-1143, 1411.
[6] Above, *ibid.*, dig. 1291.

inner and outer aisles on the north and on the south; traces of these roofs are seen against the transept walls on either side. Whether these joint roofs were first set up in that campaign or in an earlier one remains an open question. Whenever it happened, the window zone of the inner aisles became obsolete and a large part of it was presumably removed.

The extent of the damage caused by the fire of 1308 and of the ensuing repairs remains undetermined. The sources are vague, except for statements such as "the entire church and its surroundings were on fire... " — *arse*, not burnt down; or "...the church up to the middle was roofless... " as late as 1341, when the beams were being replaced [1]. The latter passage appears to suggest that damage to the nave was minor — the old beams were in part still resting on the walls.

On the other hand, information is plentiful regarding the fire of 1361 and the rebuilding campaign under way until 1369. " All beams were burnt down, three columns (*scil.* in the nave) collapsed, the altar and the four jaspar columns (*scil.* of its canopy) were ruined " [2]; and " only the walls remained standing " [3]. The latter statement sounds somewhat exaggerated and certainly Petrarch's often quoted laments are. But repairs were extensive. Both transept and nave were affected. The altar was provided with a new canopy [4]. In the nave a large number of columns in the western part were removed and replaced, though not in precisely the same sites, by brick piers carrying an arcade [5]. We think that at the same time, too, the top sections of the foundation walls were largely rebuilt or at least replaced [6], and that this operation resulted in the shifting in location and level of some of the base blocks which formerly supported the columns in the nave [7]. Certainly it was in this same campaign that the upper walls of the nave were rebuilt and given pointed windows with Gothic tracery; the top sections of the nave and façade gable, all visible in the present roof space, show characteristic late medieval brick construction.

The rebuilding campaign which started after the fire of 1361 was by no means terminated in 1369. It was continued by Gregory XI (1370-1378) under whom the north façade was given the Gothic portal which survived until the time of Sixtus V; and it was still under way, we think, in the early fifteenth century when under Martin V the nave pavement was laid down and the mural decoration was started on the upper walls of the nave.

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[1] Above, 12, digs. 1308, 1341.
[2] Above, 12, dig. 1361-1369, quoting ROHAULT DE FLEURY, 489.
[3] *ibid.*, quoting Matteo Villani.
[4] MONFERINI, " Il ciborio Lateranense e Giovanni di Stefano ", *Commentari*, 1962, 182 ff.
[5] MALMSTROM, 1967.
[6] Above, 33 ff.
[7] Above, 35.

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[1] We omit the majority of seventeenth century guidebooks with their repetitive entries on S. Paolo.

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B. ANCIENT DESCRIPTIONS AND ILLUSTRATIONS

I. ANCIENT DESCRIPTIONS

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II. ANCIENT ILLUSTRATIONS *

a) *Plans, sections, elevations and details*

1490—1510(?)	ANONYMOUS, Plan of basilica and atrium, pen and wash; Vienna, Albertina, IT AZ 703 (our fig. 122).
prior to 1573	SALLUSTIO PERUZZI (d. 1573), Rough sketch of plan, pen and ink, Florence, Uffizi, UA 701.
1551	BUFALINI, Plan of church and atrium, woodcut, FRUTAZ, *Piante*, pl. 209 (our fig. 124).
1554	GIOVANNI COLONNA DA TIVOLI, Plan of church and atrium, ink and wash; Vat. lat. 7721, fol. 83^{v} and 84^{r} (autograph date, October, 1554, fol. 61^{r}; our figs. 123 a, b).
	GIOVANNI COLONNA DA TIVOLI, Roof trusses and elevation of nave, ink, *ibid.*, fol. 85^{r} (our fig. 128).
ca. 1560	PANVINIO, Rough sketch of plan of church, ink; Vat. lat. 6781, fol. 417 (our fig. 125 a).
	PANVINIO, Rough sketch of plan, ink; Vat. lat. 6781, fol. 418, B. 242 (our fig. 125 b).
ca. 1645-6	BORROMINI, Plan of church and atrium, light pencil, Albertina, IT AZ 704 (our fig. 126).
1645-6	CARLO RAINALDI (?), Large plan of church, pencil and light blue wash; the right half of the plan is irregularly cut away; Albertina, IT AZ 705 (our fig. 127).
ca. 1810	ALIPPI (?), Plan, probably preparatory for NICOLAI, pl. I, ink and wash; (Rome, Istituto di Archeologia e Storia dell'arte, Racc. Lanciani, 31863).
1815	ALIPPI, Plan, longitudinal section & elevations of nave, transept and apse, transverse section through nave, showing elevation of triumphal arch and transept, engravings; NICOLAI, pls. II, III; B. 75 (our pls. III, IV and figs. 88, 89).
1823	SEROUX D'AGINCOURT, Plan, sections, exterior north elevation, bay of nave arcade, Corinthian and Composite capital, engravings; *Histoire de l'Art*, 1823, pls. IV, V, VI, VII, VIII; B.125, 126, 127, 128 (our figs. 87; 135; 136 a, b).
1821—1823/45	LETAROUILLY, Plan, elevation, sections, details, engravings; *Edifices de Rome Moderne*, III, 334-336, 338; B. 213-217.

* See also, BOCCOLINI, "Saggio di un catalogo dei disegni ed incisioni relativi alla basilica di S. Paolo", *Benedictina*, VIII (1954) 319 ff.; numbers referring to Boccolini's handlist are given as B.-.

1827 Uggeri, Elevation of triumphal arch after removal of mosaic, engraving; *Memorie Romane...* IV, 1827, pl. V (our fig. 133).

1827 Uggeri, Ionic capital and springing of triumphal arch, engraving; *Commissione Speciale*, plate opposite p. 30 (our fig. 134).

1830 Belloni, Plan and section of Constantinian apse, details of apse, engraving; *Sulla Grandezza e disposizione della...Basilica Ostiense...*1853(our figs. 99; 100a, b).

b) *Exterior views*

1407—1414 Taddeo di Bartolo, View from southwest, showing nave, aisles, transept and campanile, fresco; Frutaz, *Piante*, pianta LXXVII, pl. 149 (repeated with minor variations by Massaio, 1469 and 1471, *ibid.*, pl. 157, 158, watercolours).

1474 Strozzi, View from northwest, showing transept, aisles, nave, campanile, façade; Frutaz, *Piante*, pianta LXXXIX, pl. 159 (repeated Massaio, *ibid.*, pl. 160, pen and ink).

ca. 1550 Anonymous German, Narthex façade, campanile, oil on wood; New York art market, 1946.

1575 Lafréry, View from northwest, showing atrium partly collapsed, and nave, aisle, apse, buttresses and attached buildings, engraving; *Sette Chiese*, Frutaz, *Piante*, pianta CXXIV, pl. 236 (our fig. 138); view frequently repeated, e.g. Fra Santi and Laurus, see below.

1588 Fra Santi, View from northwest, reversed, woodcut; *Cose Maravigliose*, c. 6, copied from Lafréry.

1612 Laurus, View from northwest, engraving; copied from Lafréry; Frutaz, *Piante*, pl. 150.

1618 Maggi, View from west, showing atrium, façade, nave, transept and convent buildings, engraving, B. 218 (our fig. 139).

1746 Cozens, View of nave and transept from northwest, pencil, London, British Museum 1867-10-12-31 (our fig. 92) [1].

1748 Piranesi, View of façade and eighteenth century portico from southwest, engraving; *Vedute di Roma*, pl. 8, B.247; Hind, *Giovanni Battista Piranesi*, London, 1922, 39, pl. 5, fig. 6 (our fig. 86).

1815 Mazzoli, View of rear from Via Ostiensis, engraving; Nicolai, XII (our fig. 90).

1821-23 Letarouilly, View from Tiber northwest, engraving; *Edifices de Rome moderne*, III, pl. 334.

1838 Cottafavi, View from northwest, showing the façade and campanile still standing, the upper part of the outer nave wall taken down; Nibby, *Roma nel* 1838, parte moderna, II, pl. XXXV.

after 1890 Moscioni (?), View of façade and atrium, photograph.

c) *Interior views*

i) *Prior to 1823*

1749 Piranesi, Interior looking towards transept, *Vedute di Roma*, pl. 9, B.248; Hind, *op. cit.*, 40 pl. 6, fig. 2 (our fig. 91).

1743 Pannini, Interior looking northeast, oil on canvas; formerly London art market (Arisi, *Gian Paolo Panini*, Piacenza, 1961, no. 152, fig. 249).

ca. 1750 Pannini, Interior, similar though better view, oil on canvas; Moscow, Museum of Fine Arts, no. 270 (*ibid.*, no. 214, fig. 268; our fig. 140). Preparatory sketch, pencil and wash; Cambridge, England, Fitzwilliam Museum, no. 1194 (*ibid.*, fig. 200).

ca. 1750 Pannini (?), Interior looking southeast, oil on canvas, formerly collection Lanckoroński, Vienna.

ca. 1800 Granet, Interior, showing barrel-vaulting in the aisles, pen and wash drawing; Besançon, Musée des Beaux-Arts, D.2189.

ca. 1800 Woods, Interior, showing part of aisle colonnades, pencil and wash; London, R.I.B.A., Fletcher Collection, Y. 3, no. 63, p. 10.

[1] Regarding the date of Cozens' Italian journey, Oppé, "Fresh light on Alexander Cozens", *The Print Collector's Quarterly*, 8 (1921) 61 ff.

ca. 1810 Anonymous, View from inner north aisle across the nave into the transept, pen and ink; Rome, Istituto di Archeologia e Storia dell'arte, Racc. Lanciani, 31929.

1818 Rossini, View from transept into nave, engraving; first used in *I Monumenti più interessanti di Roma* (plates not numbered), B.278.

1821—1823 Letarouilly, View of nave, engraving, *Edifices de Rome moderne*, III, pl. 337.

ii) *After the fire, July 1823*

July 1823 Acquaroni, Interior in ruins, view of nave and north transept, watercolour; Copenhagen, Thorvaldsens Museum; also acquatint, B.73.

1823 Uggeri, Elevation of nave, south wall and reconstruction proposal, engraving; *Della Basilica...* (our fig. 130).

Silvestri, *Gli Avanzi della Basilica di S. Paolo...disegnati dal vero, dopo il fatale incendio... accaduto il 15 luglio* 1823, Rome, engravings.

Rossini, View looking east along ruined nave, watercolour; New York, Pierpont Morgan Library (our fig. 82). See also engraving listed in following item.

Rossini, View from transept into nave in ruin, engraving; *Antichità*, T. 99; View looking east along ruined nave, engraving, *Antichità*, T. 100 (our fig. 83); View showing the five aisles in ruin, engraving, *Antichità*, T. 101; B. 275, 276, 277.

1829 Fossati, View of nave during rebuilding, pencil; Bellinzona, Archivio Cantonale, Sc. 7, int. 597 (our fig. 84).

1843 Rossini, Reconstruction of interior of church, looking west from the transept, engraving; *Scenografia*, pl. II, B.279.

DATES *

67 (?) Saint Paul executed.

ca. 200 The presbyter Gaius, as quoted by Eusebius, points to the *tropaia* in Rome of Saints Peter and Paul on the Vatican Hill and on the Ostian Road respectively, "...ἐπὶ τὸν Βατικανὸν ἢ ἐπὶ ὁδὸν τὴν Ὠστίαν..." (Eusebius, *Ecclesiastical History*, II, XXV, 7, ed. Loeb Classical Library, I, 182).

314—335 (or **337—340?**) Constantine is reported to have built and endowed a basilica of Saint Paul at the suggestion of Pope Sylvester, « *Eodem tempore fecit Augustus Constantinus basilicam Sancto Paulo apostolo ex suggestione Silvestri episcopi...* » (*LP* I, 178). The entry is suspect for several reasons: the reference to « *Augustus Constantinus* » is unusual in that the title « *Augustus* » normally followed rather than preceded the emperor's name; a variant in a group of manuscripts names as co-founders « *Constantinus Augustus et domnus Constantius Augustus* », presumably referring to Constantine II (d. 340) and Constantius, and thus suggesting a date between 337 and 340, that is, after Sylvester's death; « *ex suggestione Sylvestri* » is unique and hence suspect. The initial foundation report states that the body of the Saint was encased in bronze « *sicut beati Petri* ». The donation list of properties, all in the East, indicates an income larger than that provided for St. Peter's (*LP* I, 178ff.); whether it is entirely fictitious or reflects donations provided in 384 (see below) is open to conjecture. The list is interrupted by a passage relating how the emperor gave all the sacred vessels to S. Paolo, as he had given them to St. Peter's, « *...omnia...vasa sacrata aurea vel argentea aut aerea...ut in basilica beati Petri...* », as well as a gold cross weighing 150 lbs., the very same weight as that over the shrine at St. Peter's. The entire passage is intended to make S. Paolo appear as important as Old St. Peter's and, although Constantine or his sons may have built a (small) church on the site, we consider this reference an interpolation of later date.

Spring 384 (or **386?**) In a rescript to the *praefectus urbi* Sallustius, the ruling emperors Valentinian II (d. 392), Theodosius I and Arcadius declare that, in view of the long standing veneration (*scil.* attached to the site) and on account of the crowds, they intend to adorn, enlarge and raise the basilica of

* We refer to gifts of furnishings, lighting fixtures and the like only when they allow conclusions to be drawn as to the structure or plan of the chancel.

Saint Paul, « ...*contemplatione venerationis antiquitus iam sacratae basilicam Pauli apostoli pro sanctimonio religionis ornare, pro quantitate conventus amplificare, pro studio devotionis attollere...* ». To that end, the prefect had already submitted a report on the site, « ...*situm locorumque faciem* ». Now he is commanded to discuss the specific problems with the bishop, his advisors, the clergy and the Christian congregation, « ...*venerabili sacerdote intimatisque omnibus et magnificentissimo ordini et Christiano populo...* », and with their approval to negotiate with the civic authorities, « ...*tam populo quam senatui...* », the removal to a new site of the old road which ran behind the (old!) basilica and along the Tiber bank, « ... *iter vetus quod basilicae praeterit dorsum quodque ripae Tiberini amnis adiacet...innovare...* ». Building across the old road should allow the architects of the new basilica to lay it out as spaciously as the site would permit, to avoid any lessening of the splendour of the larger structure, « ...*ita ut praesens via spatiis futuri operis applicetur eatenus per architectos futurae basilicae diriget formam, quatenus se planities extructioni amica praetulerit, ne ulla inaequalitas splendorem fabricae amplificentioris oblimet...* », and to stress the importance of the façade, « ...*prima statim fronte magnarum aedificationum demonstrat intentio...* ». Estimates should be carefully prepared and expenses accounted for. The rescript (*Epistulae Imperatorum Pontificum aliorum, CSEL*, ed. O. Guenther, Vienna, 1895, ep. 3, pp. 46-47) is undated and the tenure of Sallustius as *praefectus urbi*, whether 383-384 or 385-386, has been under discussion[1]. Recent opinion, summed up by Chastagnol[2], gives preference to the earlier date, convincingly to us.

390 A column in one of the side aisles (now preserved in the north porch) carries a dedicatory inscription of Pope Siricius. At its upper end his dedication is recorded: « SIRICIUS EPISCOPUS ☧ TOTA MENTE DEVOTUS »; at the base, the year is given, « ...EX...VALENTINIANI AUG...IIII ET NEOTERI V.C. ADMINISTRANTE FL. FILIPPO VIR... » and the name of Flavius Filippus, apparently in charge of construction (Diehl, *ILCV*, 1857 a; Silvagni, II, 4778).

394 Rufinus, an official of the Eastern Empire, requested and obtained relics of the Apostles, that is, linen-strips (*brandea*) lowered into their graves (Grisar, *Analecta*, 272).

395—402/3 Construction was completed in the reign of Honorius (395-423): « THEODOSIUS COEPIT, PERFECIT HONORIUS AULAM / DOCTORIS MUNDI SACRATAM CORPORE PAULI » (Diehl, *ILCV*, 1761 a; De Rossi, *Inscriptiones*, II, 81; Silvagni, II, 4780). The distich, probably independent originally, now forms part of the long mosaic inscription placed on the triumphal arch after 440 (see below, digest 440-461). In its present form, it obviously postdates construction by more than a generation, but the date of completion is confirmed by Prudentius, who by 402-3, mentions its dedication by one ruler, necessarily Honorius, « *Princeps bonus sacravit arces* » (*Peristephanon* XII, vs. 49), and who saw in place the gilded ceilings and the marble columns, « *bratteolas trabibus sublevit...subdidit et Parias fulvis laquearibus columnas* », the four colonnades, «*quaternus ordo*», and a mosaic decoration of the arcades or possibly of the triumphal arch and that of the apse, « *camiros hyalo insigni varie cucurrit arcus* » (Martinez y Fazio, *op. cit.* Bibliography, 1964).

Fifth century Inscription below High Altar, «PAVLO APOSTOLO MART.», from its lettering to be dated «not before 400 » (A. Ferrua, S.J., orally).

432—440 In the pontificate of Sixtus III, Valentinian III installed a confessio of silver: « *Fecit Valentinianus Augustus confessionem beati Pauli apostoli ex argento, qui habet libras CC* » (*LP*, I, 233).

440—461 Pope Leo the Great repaired the church after lightning (or, though less likely to us, an earthquake in 442-443, as has been suggested[3]) had damaged the structure and caused part of it to collapse, «...(*basilicam*) *Pauli post ignem divinum renovavit...*» (*L P* I, 239). On the triumphal arch a mosaic inscription, commissioned by Galla Placidia (d. 450) and originally composed of two distichs, referred in the first two lines at the top of the arch to her father's and brother's having erected the structure and, in the next two lines along the archivolt, praised the splendour added by Leo; the last two distichs were accompanied by the figures of Saints Peter and Paul, flanking the springers of the arch.

[1] For the history of the controversy, see Martinez y Fazio, *La Segunda Basilica...*, Rome, 1972, passim.

[2] A. Chastagnol, *op. cit.* Bibliography, 1966, 421 ff.

[3] De Rossi, *Inscriptiones*, 367, no. 831; Pesarini, *op. cit.* Bibliography, 1918, 208 f.

« THEODOSIUS COEPIT, PERFECIT HONORIUS AULAM
DOCTORIS MUNDI SACRATAM CORPORE PAULI
PLACIDAE PIA MENS OPERIS DECUS OMNE PATERNI
GAUDET PONTIFICIS STUDIO SPLENDERE LEONIS
+ IANITOR HIC EST, FIDEI PETRA, CULMEN HONORIS,
SEDIS APOSTOLICAE RECTOR ET OMNE DECUS ».

(Diehl, *ILCV*, 1761 a, b, c; De Rossi, *Inscriptiones* II, 28, 68 note; also 81, 98; Silvagni, II, 4780, 4784. The distichs were reported separately in various syllogai). Though damaged, the inscriptions survived till 1823 and were copied in the subsequent rebuilding. Three additional inscriptions on stone confirm Pope Leo's restoration. The first, formerly on the inner face of the façade above the central door, summed up his work, in lines 7-10:

« NAM POTIORA NITENT REPARATA CULMINA TEMPLI
ET SUMPSIT VIRES FIRMIOR AULA NOVAS
DUM XPI ANTISTES CUNCTIS LEO PARTIBUS AEDES
CONSULIT ET CELERI TECTA REFORMAT OPE ».

The participation of the priests Felix and Adeodatus is recorded, on the same slab of marble:

« LAUS ISTA FELIX RESPICIT TE PRESBYTER
NEC TE LEVITAS ADEODATE PRAETERIT
QUORUM FIDELIS ATQUE PERVIGIL LABOR
DECUS OMNE TECTIS UT REDIRET INSTITIT ».

(De Rossi, *Inscriptiones* II, 423; Silvagni II, 4783). Felix's activity is confirmed by his epitaph, dated 471 and extant in fragments, « PRESBYTER.../ PONTIFICUM *Claro placuit siC NotA* LEONI / POST LABSUM UT *Reparans veneran*DI *cul*MINA PAULI / HUIC OPERIS *tanti renovandam crede*RET AULAM / *Depositus...Leone aug.* III [I et Probiano v.c.] *conss.* » (Diehl, *ILCV*, 1762; De Rossi, *Inscriptiones* I, 831; II, 68; Silvagni, II, 4958). Pope Leo also restored the fountain in the atrium, as witness the Centula sylloge, « *Iste versiculi in atrio Sci Pauli scripti sunt. Perdiderat nunc pleno cantharus ore vomit. / Provida pastoris per totum cura Leonis...Quisque suis meritis veneranda sacraria Pauli / ingrederis supplex, ablue fonte manus* » (De Rossi, *Inscriptiones*, II, 80 f.; Silvagni, II, 4785).

468—483 Pope Simplicius provided for baptism to be administered at S. Paolo by the clergy from *regio I* (*LP* I, 249).

498—514 Pope Symmachus built almshouses (?) or pilgrims' hostels (« *pauperibus habitacula* ») at S. Paolo, S. Lorenzo and St. Peter's. At S. Paolo, he restored the apse which was on the verge of ruin, had a picture placed behind the *confessio*, a vault made (in the apse?) and a *matroneum* laid out. The meaning of the latter is unclear. He also placed a silver image of Christ and the Apostles above the *confessio*. He built steps descending from the narthex to the open space of the atrium and the fountain. Behind the apse, he arranged for water to be led in to supply a baptistery (or a bath?), which he built there, « ...*renovavit absidam, quae in ruina inminebat, et post confessionem picturam ornavit et cameram fecit et matroneum; et super confessionem imaginem argenteam cum Salvatorem et XII apostolos posuit...; et ante fores basilicae grados fecit in atrium et cantarum; et post absidam aquam introduxit, ubi et balneum a fundamento fecit* » (*LP* I, 262). See also the inscription transmitted by the syllogai, « *in absida sancti Pauli super fontem:* HEC DOMUS EST FIDEI MENTES UBI SUMMA POTESTAS / LIBERAT ET SANCTO PURGATAS FONTE TUETUR » (De Rossi, *Inscriptiones* II, 68, 98).

590—604 Pope Gregory provided for Mass to be celebrated over the body of the saint, as he did at St. Peter's, « ...*fecit ut super corpus beati Petri missas celebrarentur; item et in ecclesiam beati Pauli... eadem fecit* » (*LP* I, 310). He also arranged for digging to be done at the tomb of St. Paul, with the intention of « improving the site », as witness his letter to the Empress Constantina: « *Sed et ego aliquid...ad sacratissimum corpus sancti Pauli apostoli meliorare volui, et quia necesse erat, ut iuxta sepulcrum eiusmodi effodiri altius debuisset...* » (*Registrum Epistolarum*, Book IV, Ep. 30; *MGH, Epp.* I, 264; also Migne, *PL*, LXXVII, col. 701). A nunnery at St. Paul's, dedicated to St. Stephen, is first referred to in another letter of his, dated 604[1] (*Registrum*, Book XIV, Ep. 14; *MGH, Epp.* II, 433 f.; also Migne, *PL*, LXXVII, col. 1318; see G. Ferrari, *Monasteries*, 254 ff.).

[1] The reference to a "*praepositus loci sancti Pauli*" in the letter to Constantina need not indicate the existence of a convent (see Ferrari, *Monasteries*, 254 ff.)

687—701 Pope Sergius renewed and repaired the *cubicula*[1] around the basilica which were in disrepair, mended the roof of the church with new beams brought from Calabria, and changed the old representation of the apostles over the doors, « *...tegnum et cubicula universa in circuitu basilicae beati Pauli apostoli, quae...per...vetustate confecta fuerant...innovavit ac reparavit...et trabes fecit de Calabria adduci... Hic imaginem apostolorum vetustissimam, quae erat super fores eiusdem basilicae, mutavit* » (*LP* I, 375).

701—705 Pope John VI hung white curtains between the columns to the left and right of the altar, « *...in basilica...Pauli...inter columnas altaris dextra levaque vela alba* » (*LP* I, 383).

715—741 Roof repairs were made under Popes Gregory II (715-731) and Gregory III (731-741), the former perhaps in the transept, « *...trabes...mutavit et maximam cooperuit partem basilicae quae ceciderat et altare a novo refecit et cyburium argenteum quod fuerat ruina quassatum...* » (*LP* I, 397), the latter clearly in the nave, « *...mutavit trabes num. V atque totum...tectum ab arco altaris et usque ad regias recursit et restauravit...* » (*LP* I, 420).

772—795 Pope Hadrian wrote to Charlemagne about the work done at S. Paolo under Pope Leo, I « *...sanctus Leo papa...in basilica beati Pauli apostoli, arcum ibidem maiorem faciens, et musivo depingens salvatorem dominum nostrum Iesum Christum seu viginti quatuor seniores nomini suo versibus decoravit* » (*MGH, Epp.* V, 50). Hadrian also renewed the silverplating over the body of Saint Paul, had a large curtain made and placed at the main doors of the basilica and another one hung under the triumphal arch near the altar, while seventy others were made for the intercolumniations. He paved the atrium, then in bad repair, with marble: « *...in ecclesia...Pauli...investivit corpus eiusdem doctoris mundi ex laminis argenteis...quoniam argentum illud qui ibidem primitus erat nimis confractum existebat. Item fecit...cortinam maiorem iuxta ianuas principales, ex palleis quadrapolis...et aliam cortinam maiorem fecit ex palleis quadrapolis, quae pendet sub arco maiore iuxta altare...fecit vela numero LXX. Atrium... quod antea nimis desolatum existebat...ex marmoribus pulchris sternere fecit* » (*LP* I, 499). Since some roof beams were in bad shape, he had thirty-five new ones installed. He also restored the aisles, « *...cernens existentes trabes per prisca tempora vetustas ad modicumque ruituras...totam a noviter restauravit. In qua et mutavit trabes maiores numero XXXV; et per circuitum eiusdem ecclesiae a noviter portica omnia renovavit* » (*LP* I, 506); adorned the chancel, the altar of Saint Paul and its *confessio;* and donated altar vessels, icons and lighting fixtures (*LP* I, 504, 506, 510, 511, 512).

795—816 Pope Leo III adorned the church with images (*LP* II, 2), donated a variety of devotional objects and furnishings, especially curtains (*LP* II, 2, 8) and repaired the apse vault or provided a mosaic like that at St. Peter's, « *...camera eiusdem basilice in modum beati Petri...noviter fecit* » (*LP* II, 2). After an earthquake in 801, « *...ecclesia beati Pauli...terre motu concussa, omnia sarta tecta ruerunt...* » (*LP* II, 9; also Einhard, *Annales*, ann. 801; *MGH*, *SS* 1, 189 f.), Leo III repaired the roof, paved the church and its chancel with marble and restored the transept and aisles. He provided the windows with stucco gratings and gave images to the church, as well as lighting fixtures, a silver canopy over the altar, a gold cross and a hanging for the altar, « *...presbiterio quamque tota a ecclesia marmoravit et eius portica renovavit... in navem quae est super altare sarta tecta omnia noviter restauravit...fenestras...ex metallo gypsino decoravit...fecit...cyburium cum columnis suis super altare...crucem...pendentem in pergula ante altare...atque velum rubeum qui pendet ante altare* » (*LP* II, 9, 10, 13). Adjoining the entrance to the chancel, he placed two silver angels, flanking the icon of Christ: « *... angelos ex argento purissimo deauratos II, qui stant iuxta imaginem Salvatoris in ingressum vestibuli...* » (*LP* II, 15; for other gifts see *LP* II, 15, 16, 18, 19, 26, 27, 29, 30, 33). Capitals were placed on the marble columns of the chancel enclosure and its wooden architraves were replaced to carry marble slabs adorned with pictures: « *Super columnas vero marmoreas quae stant in circuitu altaris...ubi trabes quondam ligneae positae fuerant...super ipsas columnas lilios poni fecit et super ipsos lilios ex metallis marmoreis platomas posuit diversis picturis...* » (*LP* II, 30). At the entrance to the crypt under the High Altar, Leo III erected a portal, as witness the inscription: « *Supra portam confessionis sub altare apostolorum,* LEO GRATIA DEI III EPISCOPUS HUNC INGRESSUM SANCTAE PLEBI DEI MIRO DECORE ORNAVIT » (Panvinio, Vat. lat. 6780, fol. 96r and v; Ugonio, *Stationi*, c. 237; see also Pesarini, *Studi Romani*, I, 1913, 445).

[1] Referring perhaps to the " *habitacula* " of Symmachus, above, dig. 498-514.

847—858 Popes Leo IV (847-855) and Benedict III (855-858) repaired the damage caused by the Saracens at the tomb of St. Paul and replaced its silverplating (*LP* II, 136, 147).

10th & 11th centuries Repairs were made to the walls of the church as witness coins later found there: « *Nel* 1628 *a di* 15 *Decembre furon trovate nelle muraglie di tal chiesa* [la basilica di S. Paolo] *dieci monete sottili ...con lettere impressevi; et in una vi lessi così O/TT/O, cioè Otto che mostra Ottone Imp...* » (quoted in Pesarini, *op. cit.*, 1913, 392, n. 2). Coins of the same period, « from over seventy different mints » are said to have been found when the campanile was demolished after 1840 (Armellini-Cecchelli, *Chiese*, 1159).

1070 As abbot of S. Paolo, Hildebrand (later Pope Gregory VII) reformed the monastery and cleaned up the church, previously used as a shelter for animals (Paul of Bernried, *Vita Gregorii VII*, Migne, *LP*, CXLVIII, col. 43). Pantaleon of Amalfi donated a set of bronze doors made in Constantinople (E. Josi, *La Porta Bizantina di San Paolo*, ed. Dir. Gen. Gallerie Pontificie, Rome, 1967, 7 ff.).

1115—1143 After lightning had caused the lead sheathing (?) of the apse roof to melt and some of the beams (of the transept?) to burn in 1115, « *...sancti Pauli ex tribunali igne de coelo tactam, ut et tecti plumbum conflaretur et trabes...arderent...monstrant indicia trabes* » (*LP* II, 301). Pope Innocent II (1130-1143) built a wall resting on marble columns across the transept to support the roof, « *...tectum qui ruinam minabatur, constructo super columnis marmoreis muro, firmissime roboravit et partem tecti...longissimis trabibus resarcivit* » (*LP* II, 384).

1193—1226/35 The cloister, begun by Cardinal Peter of Capua (d. 1214) was completed by Abbot John Caetani (1212 - after 1226 and before 1235), the latter mentioned in the following inscription:

« ARDEA QUEM GENUIT QUIBUS ABBAS VIXIT IN ANNIS
CETERA DISPOSUIT BENE PROVIDA DEXTRA IOHANNIS ».

(Trifone, « Serie dei Prepositi, Rettori ed Abbati... », *Rivista Storica Benedettina* (1909) 250 ff.; Fedele, « L'iscrizione del chiostro di S. Paolo », *Arch. Soc. Rom. Stor. Patr.* 44 (1921), 269 ff.).

Before 1216 after 1227 The apse mosaic, mostly the work of Pope Honorius III (1216-1227) though begun by Innocent III, was completed after Honorius by Abbot John Caetani, as witness the dedicatory inscription: « Honorius papa iii iohannis gaietanus abbas...quod honorius artis honore / papa pius fecit... / abbas post papam, quem christus ad alta vocavit / omne iohannes opus mira pietate beavit » (Nicolai, 28 and pl. VIII; Ladner, *Papstbildnisse*, II, 80 ff.). A letter from Honorius, dated January 23, 1218, thanks the Doge of Venice for dispatching a mosaicist and requests two more to work at S. Paolo (*Registrum Honorii Papae III*, I, ed. P. Pressutti, Rome, 1888, no. 1019).

1277—1280 Under Abbot John VI and Pope Nicholas III the repainting of the frescoes in the nave was finished; fragmentary inscriptions, recorded in Cod. Barb. lat. 4402: « Pleta (sic!) est pars eclesie... ribus dom. ihois sextus abbas » and « ursus sacer et monachu », the latter referring to Giangaetano Orsini, later pope Nicholas III (J. White, « Cavallini and the lost frescoes in S. Paolo », *Journal Warburg and Courtauld Inst.* XIX, 1956, 85 f., pl. 25 c, d; see also Garber, *op. cit.*, 1918, 14 and Waetzold, *Kopien*, 56 ff.).

1285 The Gothic canopy over the High Altar was erected by Arnolfo di Cambio and Peter, his co-worker: « Anno milleno centum bis et octvageno / qvinto... / hoc opvs fecit arnulphus cum suo socio petro » (Nicolai, 231).

1323—25 Façade mosaic dates from the pontificate of Pope John XXII, « *...accepimus in facie maioris Ecclesiae* » (sancti Pauli) « *opus mosaicum sit incoeptum...* » (Severano, *Sette Chiese*, 397-398; J. Gardner, « Copies of Roman mosaics in Edinburgh », *Burlington Magazine*, CXV, 1973, 583 f.); « *Concessio...oblationum et redditum provenientium de maiori altari...facta favore operis mosaici incepti in facie eiusdem ecclesiae...* » (Armellini-Cecchelli, *Chiese*, 1159).

1349—50 An earthquake in 1349 caused the campanile to fall and damaged part of the atrium: « *...tremuoti... a Roma feciono cadere il campanile della chiesa grande di San Paolo, con parte delle loggi in quella chiesa...* » (Matteo Villani, *Istorie*, lib. I, Cap. XLV, Florence, 1577, 33); it was apparently repaired by Clement VI.

1425 The church and monastery of S. Paolo were in a bad state of disrepair. The greater part of the roof being damaged, the basilica lay open to the elements; pilgrims cooked their meals all around the walls of the church and drunkenly fouled the building; at night, herdsmen and shepherds brought their animals to shelter in the church and monastery: « *...Ecclesia cum*

monasterio Sancti Pauli extra Urbi erat...mirabiliter destituta, quod tecto pro maiori parte destituto et discooperto, ventorum, pluviarum, nivium, et grandinum receptaculum erat plenum... peregrini circum circa parietes intra ecclesiam diversorum generum carnes, et olera decoquebant, commessationibus et ebrietatibus...vacantes. Pastores vero boves, et bufalos ad pernoctandum ibidem velut in stabulo conducebant...». Only the cloister retained its beauty. On account of all this, the cardinal of Siena (later Pope Eugene IV) cleaned up the church and had the roof repaired. He also restored and reformed the monastery: «*...monasterium cum ecclesia a ignominiis perfecte, et...purgavit; ecclesiam cooperiri fecit...*» (quoted in Martinelli, *Roma ex ethnica sacra*, 1653, 272 ff.).

1585—1590 Sixtus V remodelled the chancel enclosure around the High Altar, closed the crypt under the apse and set up the cathedra in the latter: «*...il...choro antico cinto attorno di marmi...era già ornato da venti colonne...con la sedia Pontificale in capo...Ma le colonne che erano dietro l'altare con la sedia sono state levate dapoi che...Sisto V ha...ordinato la Capella Pontificia...per commodità della quale capella...sono state levate...gl'impedimenti che ingombrano la vista di esso altare* (scil. the High Altar) *al sommo Pontefice ed i cardinali che risiedono...sotto l'altare è un piccolo oratorio...e ad esso si scendeva già dalla parte di dietro per alcune scalette; sotto la Tribuna... la capella...di S. Giuliano è stata l'anno passato* (1587) *chiusa e coperta sopra per far il piano commodo alle Messe Pontificali...*» (Ugonio, *Stationi*, fol. 237r and v; for the previous situation see Panvinio, Vat. lat. 6780 f. and Pesarini, *op. cit.*, 1913, 408 ff.).

1587 Coffered ceiling of transept installed (Nicolai, 261, nos. 16, 17; Forcella, *Iscrizioni*, XII, 16).

Shortly before 1600 Transept and apse redecorated «*con ricche cappelle*» with new High Altar in the apse, coloured marble and mosaic revetment and with two altars at either end of the transept (Parisi, *Le cose meravigliose di Roma*, Rome, 1600, 17; Panciroli, *Tesori nascosti*, 1625, 655 f.).

ca. 1615 Carlo Maderno built the Cappella del SS. Sacramento, partly destroyed in 1823 (Hibbard, *Carlo Maderno*, London, 1971, 208).

1628 Coins of the tenth and eleventh century were found in the walls of the basilica (see above, dig. 10th and 11th centuries).

1725 Under Benedict XIII, the architects Antonio Canevari and Aurelio Saffi demolished the old narthex, and built the portico in front of the church, a first re-building designed by Alessandro Specchi having collapsed (inscription giving date on the entablature; Forcella, *Iscrizioni*, XII, 21, no. 37); at the same time a forecourt was created by removing the columns still standing unroofed in the atrium (Titi, *Descrizione delle pitture*, 1763, 65; Nicolai, 21).

1750 Benedict XIV had the old papal portraits restored, adding others, with an inscription under his own (Nicolai, 260).

1823 The old basilica was severely damaged by fire: the roof was destroyed, with the upper parts of the walls of the transept, the aisle colonnades and the outer walls of the aisles; the aisle colonnades were damaged, the triumphal arch endangered; the nave colonnades and clerestory walls in large parts collapsed (above, 97, Ancient Illustrations, 1823).

1824 A competition for rebuilding the basilica was publicized by the Accademia di S. Luca (Fischer, *op. cit.*, 1972).

1825 A commission was appointed to discuss rebuilding the church; Valadier's proposal to rebuild the transept only, while either demolishing the nave or using it as a porch, was rejected in favour of Pasquale Belli's project of reconstructing the old building (Fischer, *op. cit.*, 1972).

1825—29 The colonnades and upper walls of the nave, the triumphal arch and the upper parts of the transept were taken down; new columns were set up for the triumphal arch (Fischer, *op. cit.*, 1972; see also above, 97, Ancient Illustrations, 1829).

1830—31 The final plans submitted by Belli discussed in 1830; the controversy was led by Fea regarding Belli's proposal to raise the pavement level by three *palmi* in the nave and aisles, and by five in the transept (*Dubbi...della Commissione...*, 1831, 46, 56, 59 f.; Fea, *La Basilica Ostiense liberata...*, passim; Fischer, *op. cit.*, 1972).

1833—54 After Belli's death, Poletti continued rebuilding: cross wall in transept demolished (see dig. 1130); transept consecrated 1840; nave and aisles, although not quite finished, consecrated 1854; façade of 1725, including its medieval center part and mosaic, pulled down in 1840's.

1890 The cornerstone of the new quadriporticus was laid (Caldarini, *La Costruzione del quadriportico...*, 1890).

1928 Quadriporticus completed.

D. GENERAL DESCRIPTION

Old S. Paolo, built in the late fourth century and thoroughly repaired, first by Pope Leo the Great and many times thereafter, was severely damaged and in parts destroyed by fire in July 1823. It was rebuilt from 1825 to 1854, and beyond, on the old plan and apparently using the old foundations: a nave flanked by two aisles on either side and a deep transept, terminated by a semicircular apse. But the rising walls were largely built *ex novo* and the structure was re-interpreted in terms of the nineteenth century concept of a Classical Christian Temple in elevation both interior and exterior, proportions, choice of materials, colour and light.

Thus the new structure rises on the Via Ostiense in a quarter of Rome which has been crowding on it increasingly from the late nineteenth century on (pl. III; fig. 81). Its apse, facing east, turns



(photo: Fotocielo)

81. S. Paolo f. l. m.. Air view, *ca.* 1955.

its back on the highway and is joined to and hidden behind a mid-nineteenth century campanile. To the west, the basilica is preceded by a quadriporticus built between 1890 and 1928. To the north, a porch was attached to the transept in the 1840's, resting on twelve columns whose shafts were spoils from the old basilica. To the south, along the highway and attached to the transept, extend the monastery buildings, medieval with later additions and including the thirteenth century cloister. Three rooms of peculiar shape and apparently antedating the cloister intervene between it and the south transept arm: a cross-shaped structure, now used as a baptistery, its

pavement 1.24 m. below that of the transept; west of it an anteroom, now unused; finally, the so-called chapel of S. Giuliano, with remains of fourteenth century murals. From it a narrow courtyard runs west, skirting the south flank of the church and ending south of the quadriporticus in a small garden; both the courtyard, known as the *passeggiata archeologica*, and the garden shelter capitals, bases and other fragments surviving from the old basilica destroyed in 1823.

It is impossible to decide today how far this thorough rebuilding was justified by the state of the ruin. Views, done right after the catastrophe in 1823 and over the following years, and contemporary controversies illustrate the extent of the damage (figs. 82, 83). A large stretch of the north colonnade and the upper wall in the nave had collapsed. Only six arcades at the eastern and two at the western end of the nave remained, though with damaged column shafts supporting the surviving fragments of the upper wall. In the south colonnade of the nave some arches had broken down, but the entire clerestory wall had remained in place up to the eaves line. Indeed, it is surprising how much of the structure still seemed intact, at least to the naked eye: the transept to its full height; the apse; the triumphal arch surmounted by the east gable of the nave; the entire façade; the colonnades separating the aisles, both north and south; and the outer walls of the aisles. Still, the tops of the walls throughout and the bearing members had apparently suffered so badly that it was decided to pull down and rebuild the parts in immediate danger: the western transept walls as far down as the east ends of the inner aisles; the triumphal arch and its columns; and the entire nave. By 1829 these parts had been demolished and rebuilding had started on the triumphal arch; but both aisle colonnades and the outer walls of the aisles were standing untouched (fig. 84). The latter are the parts



(Pierpont Morgan Library, New York)

82. S. Paolo f. l. m. L. Rossini, nave from west, in ruins, towards transept, watercolour.



(Rossini, *Antichità*)

83. Same, engraving.

which the first architect in charge, Pasquale Belli, marked to be preserved in the plans and memo submitted in 1830. The outer walls, indeed, remained (fig. 85). In order to protect the building against groundwater and flooding, Belli also proposed — against strong opposition, led by Carlo Fea — to raise the pavement of the nave and aisles three *palmi* over the former level. As work proceeded under his successor, Luigi Poletti, further changes were made. The nave level was raised over four *palmi* and thus *ca.* 90 cm.; the aisle colonnades and their upper walls were rebuilt from the ground; a campanile was built against the apse enclosing part of it; and the medieval façade as well as the eighteenth century portico gave way to a "Neo-Early Christian" entrance. Its fourteenth century mosaic was sacrificed; so were the fresco cycles and their stucco framing formerly on the nave walls, excepting part of the series of papal portraits in roundels, now in the museum of the convent. Only the mosaic of the triumphal arch, removed after the fire and repaired, was put back.

Given this situation, archaeological evidence for what is preserved of the old basilica can be but slim. Moreover, large parts that may have survived the fire and the hand of the restorers, are hidden: the foundations, below the new nave pavement; the walls of the aisles and the lower portions of the transept walls, outside under a thick coat of stucco, inside under marble revetment. Only a few elements could be identified and in part remain visible: a large stretch of wall with window jambs and window piers high up on the south wall of the transept; both buttresses projecting south from the corners of that wall; fourth century brickwork on the outer face of the apse; a piece of fourth century brickwork at the southwest corner of the transept; and a goodly number of capitals and bases pertaining some to the aisle colonnades, one to the triumphal arch, others to the nave colonnades. Twelve column shafts from the aisle arcades were reused in the nineteenth century north porch; twelve shafts of *pavonazzetto*, heavily repaired, were placed against the walls of the transept. These elements will all be described further on.

However, one more archaeological element has to be mentioned in the present context: 29 cm. below the last step of the High Altar — it is raised four steps, 0.73 m., over the present



(Bellinzona, Arch. Cantonale, Fondo Fossati, Sc. 7, int. 597)

84. S. Paolo f. l. m. G. Fossati, nave during rebuilding, from west, 1829.



(Nibby, *Roma nel 1838*)

85. S. Paolo f. l. m. Cottafavi, exterior during rebuilding, from northwest, 1838.

transept pavement — lie two marble plaques, the one engraved PAVLO, the other APOSTOLO MART., both inscriptions facing east (figs. 98, 145). Three communicating channels of different depth, later drilled into the plaques, allowed for the lowering of *brandea*, linen strips [1]; whether or not these channels still served for offerings of oil or wine, as customary in early times, is a moot point; in our opinion, as will be shown, they do not date before the seventh century. Measurements, date and the presumed original position of the plaques will be discussed below. But since they are and were used by nineteenth century observers as a convenient point of reference, their present place, below the High Altar and 0.44 m. above transept level, should be kept in mind.

Evidence for envisaging the basilica as built in the late fourth century and as subsequently remodelled right up until its final destruction, thus rests primarily on descriptions and illustrations preceding that catastrophe. These sources will be presented in detail in the appropriate places. However, it seems advisable at this point to present an overall picture of the structure as it rose immediately before the fire on July 15-16, 1823. This preliminary picture will be based on the most complete and accurate survey of the old structure available, to wit Andrea Alippi's plans and elevations which illustrate Nicolai's huge publication and are commented on in Nicolai's text (pls. III, IV; figs. 88, 89). Contemporary exterior and interior views supplement this, the main source.

The building rose in the plain between the Tiber to the west and southwest at its closest point about 200 m. distant, and the Via Ostiensis raised over its Roman predecessor. Almost touching the road with its apse, the church stood isolated except for congeries of chapels and other low structures huddled against its east façade along the road (fig. 90), and the imposing bulk of the three-storied monastery that abutted the southern terminus of the transept. From the outside it made its chief impression through its great size and the simple volumes of its constituent elements.

To the west a simply walled forecourt, built in 1725, preceded the structure. It is not included in Alippi's survey, but it is known from contemporary *vedute* such as Piranesi's engraving of the façade (fig. 86) and it was described by Nicolai: rectangular, 265 *palmi* long and 299 wide, 59.10 m. by 66.68 m., its north wall in *opus saracinescum* tufelli construction, and thus presumably medieval. Its only decorative feature was a gate in its north flank framed by Baroque piers. At the eastern end of the court a narthex extended in front of the church, its seven arched openings articulated by piers and applied columns, singly or in pairs, supporting the entablature. An inscription gave the year of construction, 1725. Above, the façade of the nave was flanked by eighteenth century low curved half gables. It opened in two



86. S. Paolo f. l. m. Piranesi, façade from southwest, 1748.

[1] GRISAR, *Analecta*, esp. 267 ff.

superimposed tiers, each of three windows, the lower tier articulated by stuccoed pilaster strips and panels, applied, it seems, to the earlier façade wall. This early wall emerged at the level of the upper tier and carried the mosaic donated in 1325 by John XXII. All six windows were filled with *bifore* of what appears to be a fifteenth century type; a deep *cavetto*, surmounting the upper windows, supported the pediment; this was pierced by an oculus filled with Gothic wheel tracery. While the upper sections of the façade were clearly late medieval, its lower parts, possibly up to and including the two window tiers, may well be of earlier date. A three-staged brick campanile rose at the northwest corner of the façade. It was unusually low for a medieval campanile of a major Roman basilica, rising no higher than the roof of the nave. Its lowest tier contained pairs of low round-arched windows on each side that had been blocked in the course of time. The upper two tiers represent the reconstruction subsequent to the collapse of that portion of the tower in an earthquake in the middle of the fifteenth century. Each side was marked by a single lancet, the lower ones closed, the upper ones open in pointed arched *bifore* (fig. 87).

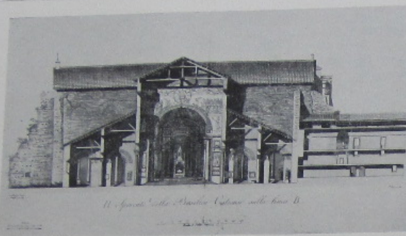
The plan of the basilica, as witness Alippi's plates in Nicolai's *magnum opus* and numerous *vedute*, was essentially the same as it was after 1823: a tall nave, flanked by two aisles on either side; the inner aisles higher than the outer ones, but under a common sloping roof; a transept, nearly as tall as the nave; and a semicircular apse, the whole oriented west to east (pls. III, IV; figs. 88, 89). Dimensions, as given by Nicolai and others, will be found below [1]. Seven doors, at Nicolai's time, led from the narthex into the church, three in the main nave and one in each of the four aisles [2]. The outer walls, except the façade, were bare of stucco, their brick-faced masonry showing the traces of numerous repairs and blocked windows. Alippi presents no elevation of the outside north or south, but contemporary *vedute*, such as Seroux d'Agincourt's (fig. 87) and Alippi's survey of the interior, show twenty-one large round-headed windows in the nave, walled up save the fifth, tenth, fifteenth and twentieth, counting from the west (pl. IV). In the north aisle, seven rectangular windows opened corresponding to every third intercolumniation, starting with the second and ending with the twentieth; they were presumably of sixteenth or seventeenth century date. Seven more windows higher up, round-headed and all blocked, remained from an earlier set. As marked in Alippi's plan, their distribution follows no clear pattern; but Nicolai [3] believed that there was originally one to each intercolumniation. In Seroux d'Agincourt's late eighteenth century elevation they appear to be round-headed and those blocked are still filled with a *bifore* tracery. In the south aisle, Alippi saw only the late rectangular windows and only six of them; the place of a seventh was blocked by the medieval convent buildings. The exterior of the transept is best studied in Nicolai's text and Alippi's plates (figs. 88, 89). High in the west wall of each arm, were three oculi, all blocked, just below the eaves line. Below, two huge arches — the outer ones with double, the inner with triple voussoirs — were interpreted by Nicolai and Alippi as window heads; indeed,



Seroux d'Agincourt, Histoire de l'Art

87. S. Paolo f. l. m. Seroux d'Agincourt, exterior from north, prior to 1789.

[1] Below, 150 ff.
[2] NICOLAI, 307, pl. I.
[3] NICOLAI, 306.



(Nicolai)

88. S. Paolo f. l. m. Alippi, transverse section through nave and aisles, 1815.



(Nicolai)

89. S. Paolo f. l. m. Alippi, transverse section through transept, 1815.

vertical lines running down from their springings suggest the jambs of enormous windows, later blocked. But the character and function of these features remain in doubt and will have to be discussed further. At the corners, both east and west of each transept arm, buttresses projected north and south respectively, designed to strengthen the west and east walls of the transept. Indeed, a huge crevice shows in Alippi's survey at the northwest corner; at the southwest as well as the southeast corner, the facing had fallen off the buttress cores (fig. 88, 89). A fifth buttress at the southwest corner, apparently late in date, closed the last oculus, already blocked, to the south. Traces of two oculi still remained visible at Alippi's time high up in the short end wall of the north transept (fig. 87). They had been blocked and replaced by the upper parts of two large rectangular windows starting halfway up the transept wall; apparently of sixteenth century date, these were surmounted in the gable by a small rectangular opening. Nicolai, however, still saw clear traces of three huge round-headed windows and three oculi above, arranged axially. The east face of the transept and the apse were

not surveyed by Alippi and were rarely shown in *vedute*. But Nicolai describes the transept walls, like their western counterpart, as having opened in two huge round-headed windows and three oculi surmounting the intervals; and, indeed, Alippi's longitudinal section shows, foreshortened, two oculi on the north arm, corresponding to the three in its west face (fig. 88). Also, his plan presents two buttresses obliquely projecting from the apse (pl. III). They reappear in a vignette of Nicolai's work, with the half cylinder of the apse emerging between, topped by a bracketed cornice (fig. 90).



(Nicolai)

90. S. Paolo f. l. m. Mazzoli, view of apse from Via Ostiensis, south, 1815.

Inside, the nave walls were carried by arcades, each resting on twenty tall fluted columns and two end piers, as shown in Alippi's elevation and Piranesi's view of the interior (pl. IV; fig. 91). We have tabulated (p. 153) the measurements of the columns as taken by Nicolai and his predecessors and shall discuss other details below. Of the twenty-one intercolumniations on either side, the first to the west had been blocked. Above the apex of the arches ran a continuous projecting cornice; from it rose the upper walls up to the clerestory windows, one axially over each intercolumniation; but only four on either side remained open in Nicolai's day (pl. IV). The spandrels of the arcade were filled with a stucco tendril design, while the upper walls were frescoed: running above the cornice, a frieze carried in roundels the famous series of papal portraits; higher up, framed by twisted colonnettes and cornices, presumably in stucco, were panels with biblical scenes[1]. Early Christian in origin, the panels were repainted in 1277-1280 by Cavallini and others[2]. The clerestory, by Alippi's time, was unadorned, except for an eighteenth century framework of plain pilaster strips and stringcourses. But still in the 1630's figures of saints stood between the windows, one to each of the twenty-two spaces on either wall. An open truss roof covered the nave, much admired for its technical virtuosity by eighteenth century architects[3]. The pavement, four *palmi* lower than at present, one recalls (fig. 145), was composed originally of marble fragments, many of them pagan and Christian epitaphs, and all carefully transcribed by early archaeologists down to Nicolai; by



91. S. Paolo f. l. m. Piranesi, view of nave from west, towards transept, 1749.

[1] Garber, *Wirkungen der frühchristlichen Gemäldezyklen der alten Peters- und Pauls-Basiliken*, Berlin-Vienna, 1918, *passim*; Waetzold, *Kopien*, 56 ff.; Stamm, *Probleme des Bildes...in mittelitalienischen Freskenzyklen...*, Bonn, Diss., Ph. D., 1974, 101 ff.

[2] Gardner, "S. Paolo fuori le mura, Nicholas III and Pietro Cavallini", *Zschr. für Kstgesch.*, 1971, 240 ff.

[3] E.g. C.W. Tatham, inscribed "From a drawing by a Spanish Artist...1795", London, *RIBA*, no. 8B.

his time, the majority had been transferred to the cloister and to a store room[1]. The aisles, two on either side of the nave, were separated by an arcade, resting on twenty columns, as in the nave, and keeping the same distances, but unfluted and much lower (pls. III, IV; figs. 82, 83, 91, 142a). The arcade carried an upper wall, dividing the two aisles and pierced by arched openings, one to each of the intercolumniations. Above the openings, crossbeams carried the sloping roof of the inner, higher aisle. Similar crossbeams, anchored below the sill of the openings on the outer face of the dividing wall and, opposite, atop the outer wall of the aisle, continued the roof downward over the low outer aisles.

At the east end of each aisle an arch, resting on heavy piers and headed by triple brick voussoirs, opened toward the transept (fig. 88). The nave correspondingly communicated with the transept through the triumphal arch; supported on either side by a pier and a huge Ionic column, it carried on its face the mosaic of the Four and Twenty Elders, done in the pontificate of Leo I (figs. 88, 132). From the nave and aisles five steps led up to the level of the transept; the nave steps, unlike those in the aisles, filled its easternmost bay. Inside the transept, immediately behind the triumphal arch, a square chancel of sixteenth century date enclosed the High Altar over the grave of the Apostle, surmounted by Arnolfo di Cambio's baldacchino. A diaphragm wall crossed the transept along its transverse axis (fig. 89). Supported by four huge piers, the two outer ones attached to the end walls of the transept, and by six columns, three on either side, it opened in the center in an arch as high as the apse; to the right and left were two groups of four arcades and six steep window-like upper openings, the two at either end piercing the piers. Clearly an insert, the diaphragm wall was always recognized as being of twelfth century date. Somewhat lower than the nave from the start, the transept and diaphragm walls by Alippi's time carried a coffered ceiling donated in 1587. Two altars of the same date were placed against each of the short end walls (pl. IV; fig. 89); the east wall of the north arm opened into the Cappella del Crocifisso; that of the south arm into the Cappella del Sacramento, designed by Carlo Maderno, and into a small circular baptistery, both flanking the only entrance from the Via Ostiensis. Attached to the south wall of the transept, but without access from there, Alippi saw a cross-shaped room apparently unused. Westward it was adjoined by a square space, divided in two, the larger westernmost part, the Cappella di S. Giuliano; the partition wall, to the east, rested on an arcade which rose from a lower level, blocked and frescoed over the blocking (pl. III; fig. 89).

The apse, on the center axis of the basilica, opened between the chapels later built against its flanks (pls. III, IV). Semicircular in plan, its pavement, as Alippi saw it, was raised two steps above that of the transept, and its walls, below the springing of the vault, were covered with a sumptuous sixteenth century decoration. Further up, the half-dome sprang from a level corresponding to that of the triumphal arch; but, its diameter being wider than that arch, its apex rose considerably higher. The late wall decoration terminated eastward in a straight colonnaded screen wall which in plan cut off the apex of the apse curve and in elevation hid from view the lower section of the half-dome and of the thirteenth century mosaic donated by Honorius III. The screen was apparently designed as a background for the new High Altar in front of it, built in 1600 and raised three steps above apse level. Piercing the screen and apse wall, a door led to a short anteroom and from there to a rectangular space, enclosed between the two apse buttresses. Used as a monks' choir, it rose vaulted but unadorned over a shallow vaulted basement, with steps descending east and west; stairs built into the south buttress led

[1] Nicolai, 53f. Those remaining *in situ*, Nicolai listed, 175 ff.

from the choir to the basement. Vice versa, a circular staircase inside the north buttress ascended from the choir to a room of similar proportions on the upper floor, which rose high above the springing level of the half-dome (pls. III, IV). As surveyed by Alippi, these rooms were, no doubt, late; but parts may go back to Early Christian times. Of the three rooms off the south transept, the cross-shaped structure was then level with the transept, but its original level (now covered up) corresponded almost exactly with that of the old nave, and its anteroom opened westward in a five-arched arcade, rising from a level still about 2 *palmi* (0.45 m.) lower — a feature, as we shall see, of some significance (fig. 89).

This general description of the church, as it stood shortly before 1823, gives the needed points of reference for the detailed analysis of the archaeological, graphic and descriptive evidence available.

E. ANALYSIS

1. Archaeological evidence

I. Before 384

a) *The Site*

S. Paolo stands in a low plain, two kilometres from the Aurelian Walls and Porta Ostiensis (Porta S. Paolo) hard on the Via Ostiensis. Rising only 13 m. above sea level, its west front is no more than 200 m. from the nearest point of the left-hand bank of the Tiber. The ground to this day is humid and, prior to the construction of the embankment and of the drainage sewer along the Via Ostiensis, the building and its surroundings as far as the road[1] were periodically exposed to flooding both from groundwater and the river; the more so, since in Antiquity and as late as the early nineteenth century (fig. 92) the Tiber ran much closer to the church. East of the basilica, the modern double-lane Via Ostiensis almost touches with its right, western edge the nineteenth century campanile of the basilica, and thus is but 12 m. from the apex of its apse (fig. 93). The old Roman road, occupying as it did the right-hand section of the present highway[2], thus formed an equally effective eastward boundary for the church destroyed in 1823. The road pavement, originally 4 m. below present ground level[3], was presumably raised over the following centuries. East of the road, starting near Via delle Sette Chiese and for a length of roughly 250 m., a hill, the Rocca di San Paolo, steeply slopes towards the present highway and originally

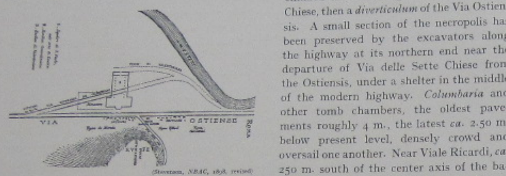


(London, British Museum)

92. S. Paolo f. l. m. Cozens, view of exterior and surroundings from northwest.

[1] Lanciani, *New Tales...*, 1901, fig. on p. 170.
[2] Lanciani, 1917, *11*.
[3] *Ibid.*

extended close to the old Via Ostiensis. Pagan mausolea, dating from the first century B. C. to the third and fourth centuries A. D., covered the hillside and skirted the eastern edge of the Roman road; one continuous stretch, approximately 350 m. long, has been identified, extending from the crossroads of Via delle Sette Chiese, 100 m. to the north, to opposite the present Viale Ricardi, an equal distance to the south of the transept [1]. A group of tomb structures, too, climbed the hill along the Via delle Sette Chiese, then a *diverticulum* of the Via Ostiensis. A small section of the necropolis has been preserved by the excavators along the highway at its northern end near the departure of Via delle Sette Chiese from the Ostiensis, under a shelter in the middle of the modern highway. *Columbaria* and other tomb chambers, the oldest pavements roughly 4 m., the latest *ca.* 2.50 m. below present level, densely crowd and oversail one another. Near Viale Ricardi, *ca.* 250 m. south of the center axis of the basilica [2] and quite close to the southeast corner of the convent buildings, a *diverticulum* branched off Via Ostiensis, its pavement level with the main road, and running northwest in the direction of the church (fig. 93) [3]. Indeed, in 1850 when a new baldacchino, since destroyed, was raised and the Gothic baldacchino reassembled over the High Altar, the pavement of this *diverticulum* was seen under the triumphal arch "at an angle of 14° with the Via Ostiensis" [4], the same angle marked at the branch-off point of the *diverticulum* 250 m. distant, and "at a distance of 15 feet west of the grave" of the Apostle [5]. A group of mausolea was uncovered at the branch-point [6] and it is reasonable to assume that tomb structures continued all along the *diverticulum* as they did along the Via Ostiensis. Indeed, in 1850, a pagan mausoleum was uncovered only a few steps from the Shrine of the Apostle [7]. We also suspect that the present cross-shaped baptistery and its anteroom, off the south transept, incorporate the remains of a sizeable mausoleum; the façade arcade of the anteroom before 1823 rose level with the footing of the shrine of Saint Paul. The shrine, then, was located in the midst of a large necropolis extending along the Ostiensis and its *diverticula* and it was in constant use from at least the second through the fourth century.



(Stevenson, *NBAC*, 1898, revised)

93. S. Paolo f. l. m. Plan of surroundings in Antiquity, 1898.

b) *The Shrine*

The shrine was identified with a *columbarium*, as the discoverer Virginio Vespignani called it, perhaps using the term loosely for quite a small mausoleum. The mausoleum, clearly

[1] Lugli, *Not. Sc.* 1919, 285 ff.; for older finds also *Not. Sc.* 1897, 335 ff. and *passim*; *ibid.*, 1898, 24 and *passim*. Summary, Lanciani, 1917.

[2] Lanciani, 1917, 20.

[3] With Lanciani, *op. cit.*, we disagree with the thesis hesitantly proposed by Stevenson, *NBAC*, 1897 and strongly defended by Borsari, *Not. Sc.* 1898, and still by Lugli, *Not. Sc.* 1919, that the *diverticulum* was actually the Ostiensis, deflected either from the outset or by Constantine wanting to increase the space east of the Shrine of the Apostle.

[4] Lanciani, *New Tales*..., 1901, 166.

[5] *Ibid.*, and Stevenson, *NBAC* III (1897), 283 ff..

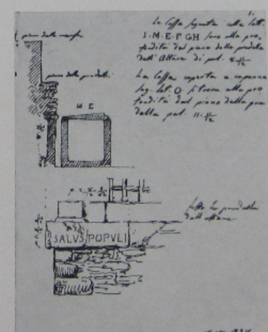
[6] Stevenson, *NBAC* IV (1898), 68 and pl. V.

[7] Stevenson, *NBAC* III (1897), 319; also Lanciani, *NBAC*, 1917, 25.

at the time of its construction venerated as the shrine of Saint Paul, rose below the High Altar, extending slightly west, north and east beyond the PAVLO plaques. It was uncovered early in 1838 and sketched hastily, though with some measurements by Vespignani, then Poletti's assistant, and his drawings and notes are our only source for the appearance and date of the shrine and of a number of tombs found nearby. As a point of reference for his vertical measurements he chose at times the PAVLO plaques, at other times the "*predella dell'altare*", the altarstep, 29 cm. higher up. For simplicity's sake we shall convert all to the level of the PAVLO plaques. His records are contained in a small sketchbook and in a number of loose sheets later bound in a scrapbook, both from Lanciani's collection [1] and now in the Biblioteca dell'Istituto di Archeologia e Storia dell'Arte in Palazzo Venezia; the sketchbook under Roma XI ms. 2, the scrapbook under Roma XI ms. 67. We list briefly and without comment the drawings and notes relevant to our context, and we shall revert to them later in detail.

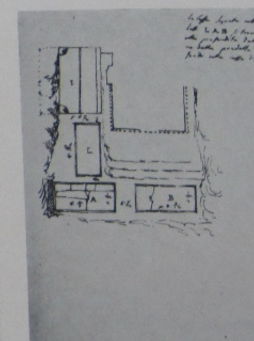
The sketchbook first [2]:

fol. 1r. Sections through the hollow space below the altar and adjoining sarcophagus E (fig. 94), the latter's floor 8 ¹¹/₁₂ *palmi* below the PAVLO plaques; below on the sheet, corner of *columbarium* (see below, fol. 15), showing masonry of spoils, the corner block inscribed SALVS POPVLI, a pilaster base and the left-hand end of the grill, all measured; upper right, a note gives the level of the sarcophagi I, M, E, F, G and H, at 8 ¹¹/₁₂ *palmi* below the altarstep, while grave O, with a tile-roof *a capanna*, was 11 ¹¹/₁₂ *palmi* down.



(Palazzo Venezia, Racc. Lanciani, Sketchbook, f. 1r)

94. S. Paolo f. l. m. Vespignani, section through shrine and sarcophagus E and northwest corner of shrine, 1838.



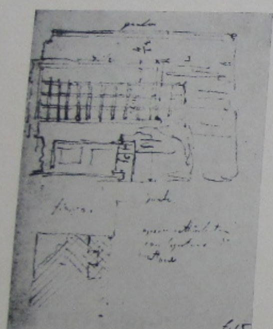
(Palazzo Venezia, Racc. Lanciani, Sketchbook, f. 3r)

95. S. Paolo f. l. m. Vespignani, plan of altar and sarcophagi, 1838.

[1] Lanciani published the contents of both the sketchbook and the notes in the scrapbook referring to S. Paolo in *NBAC*, 1917, 7 ff. In his collection the sketchbook was marked II D 20, the scrapbook I F 35.

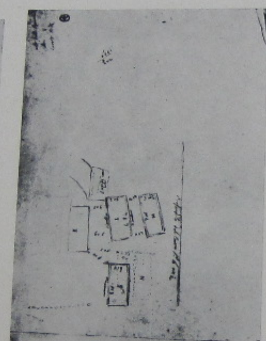
[2] The drawings are done in pencil, some gone over with ink.

fol. 1^{v}. Measured drawing of sarcophagus E and inscription naming the presbyter Gaudentius and the consular date 389.
fol. 2^{v}. Section through altar and altar step, and a sarcophagus B, its bottom level 4 *palmi* below the altarstep and a detail drawing of another sarcophagus A, at that level.
fol. 3^{r}. Plan of Sixtus V's altar, enclosed by grill, and of sarcophagi A, B, L and I (fig. 95), the former three having their bottom levels 4 *palmi* below the altarstep, the latter at 8 $^{11}/_{12}$.
fol. 15. The west face of the mausoleum, with overall measurements, its top 3 $^{3}/_{4}$ *palmi* below the PAVLO plaques, its right end unexcavated (fig. 96); below, a stretch of reticulate wall with brick quoins, and the note, "*opera retticulata con legatura di mattoni*", and above, "*fianco*", the whole below the PAVLO plaques but not measured.



(Palazzo Venezia, Racc. Lanciani, Sketchbook, f. 15)

96. S. Paolo f. l. m. Vespignani, façade and flank of shrine, 1838.



(Palazzo Venezia, Racc. Lanciani, Scrapbook, f. 42)

97. S. Paolo f. l. m. Vespignani, plan of sarcophagi north of shrine and springing of apse, 1838.

The first leaf in the sketchbook bears the notation "*gennaio* 1838", the last shows a drawing (of no concern to us), fol. 17^{r}, dated "*6 aprile 1838*". The presupposition is that the sketches were made in chronological succession. But this is not absolutely certain; Vespignani may well have done his sketches at random.

The scrapbook contains only two sketches relevant to our purpose:

fol. 40. Left-hand corner of the mausoleum, much as in the sketchbook, fol. 1^{r}, with slightly different measurements, i.e. SALVS POPVLI block 2.8 $^{1}/_{12}$ *palmi* long and 1.3 $^{1}/_{12}$ *palmi* high.
fol. 42. The positions of sarcophagi E, K, L, M with respect to each other (fig. 97) and the curve of an apse, "*L'apside uno (?) sopra*", with note, "*profondità del cavo p. 6 on.* $^{1}/_{2}$".

Fol. 15 (fig. 96) of the sketchbook is most important in our attempt to envisage the shrine. It was done during excavation, when Vespignani could see only 7 $^{1}/_{2}$ *palmi* (1.67 m.) of its width. To the left, the north corner was either not yet excavated (although it appears in detail already on fol. 1^{r}), or else, Vespignani had no room for it on his small leaf — in any event, he marked only an irregular line. To the right, a stretch of unknown length of the mausoleum remained in the scarp of the dig, extending 3 *palmi* (0.67 m.) to the plumb line of the southern edge of the PAVLO plaques higher up. Vespignani apparently identified the top of the mausoleum at 3 $^{3}/_{4}$ *palmi*, (0.83 m.) below that plaque. Three horizontal lines, marking that level, possibly represent a terminating cornice. The bottom level of the shrine was seen by Vespignani to be 6 *palmi* (1.34 m.) below the three-line mark and thus 2.17 m. below the PAVLO plaques. On that bottom level he also noted a rectangular panel (we remain uncertain whether the notation to the right 3 *palmi*, 0.67 m., refers to its height) enclosing two smaller ones, possibly epitaphs on a common slab, re-used as the side of a *forma* built against the bottom part of the shrine. Roughly halfway up between the bottom level and the three-line mark, he saw a longish opening, closed by a grill, reaching to but 1 *palmo* (0.223 m.) from the three-line mark. Since the height of the grill is given as 1 *palmo* 7 *oncie* (0.36 m.), its squares, on thirteen vertical and three horizontal rows, would each measure roughly 9 cm. a side, figuring 2 cm. thickness for the iron bars. The length of the opening visible to Vespignani, then, would have been *ca.* 1.10 m.; but it may have continued to the right, below the scarp. Its sill rose 0.76 m. (1.34 - [0.22 + 0.36 =] 0.58 m.) from the bottom level of the mausoleum. (The sketch of the reticulate wall at the bottom of fol. 15 will be discussed later).

On fol. 1^{r} of his sketchbook (fig. 94) and on fol. 40 of the scrapbook, Vespignani drew carefully and in detail the left-hand, northern corner of the west face, either not yet visible or simply omitted when he sketched fol. 15 (fig. 96). A zone, built of irregular rubble masonry and strengthened by three stone quoins at the corner, formed a base. We presume this to have been underground and the *forma* with the two-epitaph slab to have been built against this base. The real ground level of the mausoleum we believe to be marked by a course of long stone blocks, 1 *palmo* 3 *oncie* 2 *minuti* (0.29 m.), that is one R. ft. high, which project slightly. The left-hand corner block — its length is given in the scrapbook drawing, fol. 40, as 2 *palmi*, 8 $^{1}/_{4}$ *oncie* (0.60 m.) — is inscribed SALVS POPVLI. This course, in turn, is surmounted by a second row of blocks, perhaps a bit lower and slightly set back, which reach to the sill of the grilled opening. Above the SALVS POPVLI block rises the base and bottom part of a corner pilaster; in the sketchbook fol. 1^{r} the distance from the edge of the SALVS POPVLI block, a few centimeters at most beyond the pilaster, to the northern edge of the grill is given as 2 *palmi* 8 *oncie* 9 *minuti*, 0.62 m. (fig. 94).

Folios 1^{r} and 3^{r} of the sketchbook and fol. 42 of the scrapbook (fig. 97) provide additional clarification. Folio 1^{r} (fig. 94) gives a section through the hollow space, unmeasured, below the High Altar, apparently the interior of the mausoleum which Vespignani did not enter. Adjoining it, he drew a section through sarcophagus E, noting its bottom level 8 $^{11}/_{12}$ *palmi*, 1.98 m., below the altar step, that is only 1.69 m. below the PAVLO plaques. Since fol. 42 of the scrapbook (fig. 97), a plan of the group of sarcophagi E, K, L, M, N, shows E north of the shrine, the section apparently runs north and south. At the same time, it seems likely to us that the sarcophagus was placed on the true outside ground level of the mausoleum, corresponding to the bottom line of the SALVS POPVLI course. It should be noted, however, that the sarcophagus E, sheltering the remains of a presbyter Gaudentius and his wife Severa (the inscription[1] is copied on fol. 1^{v} of the sketchbook and on fol. 40 of the scrapbook) dates as

[1] Diehl, *ILCV*, 1130.

late as 389, TIMASIO ET PROMOT(*eo consulibus*). On fol. 42 of the scrapbook other sarcophagi, K, L, M, N, are likewise shown scattered further north (fig. 97); all were on the same level with E, except one, O, witness the notation on fol. 1r of the sketchbook, a grave covered with tiles *a capanna* as far down as 11 $^{11}/_{11}$ *palmi* (2.65 m.) below the altar step, and thus 2.36 m. below our point of reference, the PAVLO plaques. More important though, is a short stretch of wall on fol. 42 of the scrapbook, hardly 2 *palmi*, if that much, from the western edge of sarcophagus E and curving from north to west; we shall encounter it later. The reticulate wall with brick quoins, sketched on fol. 15r and marked "*fianco*" (fig. 96) is likewise of major significance. In the context of the sheet it is best referred to the north side of the structures uncovered by Vespignani. (He apparently never saw the south flank.) Its brick quoins at the right corner cannot have bonded with the stone courses on the west façade of the shrine and its SALVS POPVLI corner.

This allows for two alternative explanations: either the reticulate wall represents the west corner of the north flank of a second mausoleum, backing up against the east face of the shrine, or it is the west corner of the original, smaller shrine which at a later time was enlarged westward and provided with a façade in ashlar masonry. The relation of the reticulate wall to the PAVLO plaques, as sketched by Vespignani, without measurements unfortunately, is unclear; but the wall projecting far beyond the vertical given by the edge of the PAVLO plaques would tend in either alternative to confirm its position east of the shrine.

Folios 2r, 3, 7, and 8 are of but secondary importance. The plan on folio 3r (fig. 95) was done at a level higher than that of the shrine. It shows the altar *confessio* of Sixtus V, enclosed by a continuous grill south, west and north, "*loculo difeso da inferriata*", and four graves nearby: two, A and B, at a depth of but 4 *palmi* (0.89 m.) presumably below the altar step west of the altar and a third, L, at the same high level, north (fol. 2r, an elevation from the north, showing the position of B explains the situation). Apparently, then, digging west and northwest of the altar had hardly started. On the other hand, to the northeast it had reached a depth of 1.69 m. below the PAVLO plaques and uncovered sarcophagus I (one recalls the notation on fol. 1r of the sketchbook) resting along both the east stretch of the north face of the shrine and presumably the eastward adjoining reticulate wall.

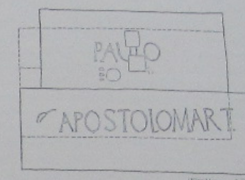
We shall proceed later to present a tentative reconstruction of the finds made by Vespignani in 1838. Suffice it here to state that they were the remains of a monument of early date, facing the *diverticulum*. Nearly 3 m. wide and quite low on the outside, though presumably deeper inside, its façade was articulated by a socle zone, corner pilasters and, presumably, a terminating cornice. Its main feature was a long grilled opening, not far above ground level and obviously designed to allow the faithful to peer inside at the *locus venerationis*. Given its later history, its site and appearance, the monument can hardly be anything but the *tropaion*, as the contemporaries called it, the shrine of Saint Paul.

c) *The Inscription*

Kirschbaum[1] has pointed out that the two plaques below the High Altar, inscribed PAVLO and APOSTOLO MART. respectively, are neither their original length, nor in their original position (fig. 98). The APOSTOLO MART. plaque, now 2.12 m. long and 0.93 m. wide, originally measured at least 2.40 m. in length. Whether the PAVLO plaque was only 1.92 m. long to start with, as it is now, or has been cut down as well, remains an open question. In any event,

[1] Kirschbaum, *Gräber*, 181.

it appears from a number of tiny holes along its lower edge that the PAVLO plaque was intended to hold hooks for hanging lamps and it must have been placed vertically rather than horizontally. It is equally clear that the inscription as it now reads, PAVLO APOSTOLO MART. is dedicatory in character and wants to be supplemented at the beginning by the name of the donor. The date of the inscription has been much discussed. The original attribution to the time of Constantine (De Rossi, Silvagni) has been largely abandoned (Lanciani, Styger, Belvederi) in favour of a late fourth century date and thus the time of the foundation of the basilica. However, a later date in the fifth century has also been proposed. We shall revert to the question in its appropriate place[1], but we should like to point out now that obviously the inscription must have been added to the shrine at a later point in its history.

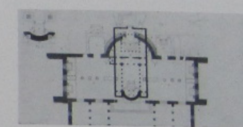


(Kirschbaum, Gräber)

98. S. Paolo f. l. m. PAVLO plaques below High Altar, reconstruction.

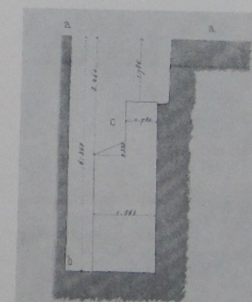
d) *The Pre-Theodosian Apse*

In 1850, when building of the sunken *confessio* in front of the High Altar and below the triumphal arch was begun, Belloni found the remains of an apse west of the shrine (figs. 99; 100a, b). As with Vespignani's discoveries, Belloni's publi-



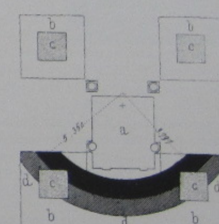
(Belloni, Della Grandezza ...)

99. S. Paolo f. l. m. Plan of Theodosian transept and reconstruction of pre-Theodosian basilica, 1850.



(Belloni, Della Grandezza ...)

100a. S. Paolo f. l. m. Section, seen from south of pre-Theodosian apse.



(Belloni, Della Grandezza ...)

100b. S. Paolo f. l. m. Plan of pre-Theodosian apse.

[1] Below, 147 f. 160, 162 f.

cation is nearly the only record; nearly, because Vespignani twelve years earlier, though possibly without recognizing it, had sketched on fol. 42 of the Lanciani scrapbook a small part of its curve (fig. 97). What Belloni saw was a larger segment near its apex, with an inner radius of 3.797 m. and its center just a few centimeters east of the altar *mensa*. The foundation of the apse was dug to a depth of 6.368 m., measured from the post-1823 level of the transept and thus 6.80 m. below the PAVLO plaques. The thickness, 1.563 m., was considerable. At a level 3.24 m. below transept level, that is 3.68 m. below the PAVLO plaques, a setback on the outside, that is the west side of the foundation, sloped upward and at a point 0.335 m. higher reached the starting point of the rising apse wall [1]. This wall, 0.782 m. thick, ended, broken off we presume, 1.786 m. below transept level, 2.22 m. below our point of reference, the PAVLO plaques. The construction, as recorded by Belloni, of the apse and presumably its foundation as well, was in brick with high mortarbeds.

Again we postpone discussing the possible reconstruction of both the apse and the building to which it belonged. Instead we limit ourselves to a few obvious points. To begin with, the apse cut off the shrine from the *diverticulum*. The approach to the shrine was now from the east, from the Via Ostiensis. Second, the apse crowded the shrine closely on its west side, with barely 1.50 m. to spare; thus, the original main face of the *tropaion* and its grill became hard of access; only a very few of the faithful at one time would be able to peer through the opening. Third, the floor level of the apse must have been higher up than the broken-off stump of its rising wall. To bring it up to the socle course of the shrine 1.69 m. below the PAVLO plaques, it must have lain at least 0.53 m. above that stump; a slight setback on the inside of the apse wall, to be expected at floor level, would have disappeared.

II. After 384 - the basilica

a) *The Nave*

It is likely that large parts of the foundation walls in the nave and aisles and considerable stretches of the aisle walls and of the lower portions of the nave façade have survived. But none of these parts are accessible and we must exclude them from the realm of archaeological evidence. On the other hand, enough is preserved of the capitals, bases and column shafts to provide a reasonably exact idea of the architectural sculpture employed in the arcades of the nave and aisles.

A number of capitals, bases and fragments of shafts are displayed along the southern flank of the basilica [2]. The free-standing capitals and bases have been studied by Deichmann and Tschira [3]. They have divided the capitals into four groups. Group I includes capitals from the main nave arcades, consisting of four Corinthian capitals and additional fragments of Severan date and two capitals of similar design, but of late antique date. Three of the Seve-

[1] Kirschbaum, *Gräber*, fig. 48, mistakenly placed the setback on the inner curve of the apse, thus arriving at an erroneous reconstruction, *ibid.*, 178 ff.

[2] In discussing these capitals and bases, Mr. John Hermann has given valuable assistance.

[3] Deichmann and Tschira, "Die frühchristlichen Basen und Kapitelle von S. Paolo fuori le Mura", *Röm. Mitt.* 54 (1939), 99 ff. (henceforth quoted as Deichmann-Tschira).

ran capitals are 1.11 - 1.12 m. high (fig. 101), while the fourth is 1.34 m. high. We do not know whether the latter was used in the church and, if so, where. The two late antique capitals are 1.11 m. and 1.04 m. high respectively (figs. 102, 103). Group II includes eight [1] white marble smooth leaf capitals (*Vollblattkapitelle*) of late antique manufacture, four Composite and four Corinthian, ranging in height from 0.82 - 1.05 m., the smaller ones with a diameter of *ca.* 74 cm. (figs. 104; 105 a, b). Of these, the Composites vary from 0.81 - 1.05 m. in height and the Corinthians from 0.82 - 0.96 m. A third group is composed of Corinthian smooth leaf capitals of the same type as those in Group II, but of lower height, ranging from 0.67 - 0.76 m. Deichmann and Tschira also list a fragment of an Ionic capital 55 cm. high, of late antique date (fig. 106). We also call attention to two marble Corinthian pilaster capitals, one of apparent Severan date, 1.21 m. in height, and a second of perhaps Tetrarchan date, 1.17 m. high (figs. 107 a, b). On the Severan pilaster capital, the leaves are carved more deeply and with greater fullness, those at the top outer edge swinging out



(photo: Krautheimer)

101. S. Paolo f. l. m. *Passeggiata Archeologica*, Corinthian nave capital, Severan.



(photo: John Hermann)

102. S. Paolo f. l. m. *Passeggiata Archeologica*, Corinthian nave capital, late fourth century.



(photo: Krautheimer)

103. S. Paolo f. l. m. *Passeggiata Archeologica*, Corinthian nave capital, late fourth century.

generously towards the corners. The stock of the abacus *flos* is similarly generously curved and deeply cut. The carving of the second pilaster capital is harder and more schematic. It is characterized by an abundance of visible drill holes and strutts, showing that it is not so well finished. In carving the leaves, the lines are parallel, rather than curved into a full organic structure.

The majority of the bases preserved are of late antique date in a simplified Attic form. They have been discussed by Deichmann and Tschira and illustrated in profile. Three groups are categorized:

1. Two large bases with a diameter of 1.08 m. and 1.10 m. respectively; an antique base

[1] The total number of capitals in this group is eight, not twelve, as cited by Deichmann and Tschira, who give the height of eight, although they mention twelve.



(photo: Krautheimer)

104. S. Paolo f. l. m. *Passeggiata Archeologica*, Composite full leaf capital from aisles, late fourth century.



(photo: John Hermann)

105a. S. Paolo f. l. m. *Passeggiata Archeologica*, Corinthian full leaf capital from aisle, late fourth century.



(photo: John Hermann)

105b. S. Paolo f. l. m. *Passeggiata Archeologica*, Corinthian full leaf capital from aisle, late fourth century, broken, with clamps.



(photo: John Hermann)

106. S. Paolo f. l. m. *Passeggiata Archeologica*, Ionic capital from triumphal arch, late fourth century.



(photo: Krautheimer) (photo: John Hermann)

107 a, b. S. Paolo f. l. m. *Passeggiata Archeologica*, pilaster capitals terminating nave arcades, (a) Severan, and (b) late antique.

with a diameter of 1.26 m.; three fragments of bases richly decorated with leafwork of Severan date, the largest fragment with a diameter of far more than 1.44 m.; an Ionic granite base with a diameter of 1.30 m.

2. Nine bases of the same type as the first two mentioned above, with a diameter of from 95 to 106 cm. and a height of 43 - 50 cm. (fig. 108). The largest of the bases preserved was the one bearing the inscription of Filippus and the date 390 [1]; it originally stood at the easternmost end of the northern aisle colonnade (figs. 109, 110). On its rim are carved the tools of a mason: trowel, chisel and hammer.

3. Two smaller bases of the same type with a diameter of 78 cm., a height of 29 cm. (fig. 111).



(photo: Krautheimer)

108. S. Paolo f. l. m. *Passegiata Archeologica*, base from aisles, late fourth century.



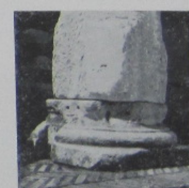
(photo: Krautheimer)

109. S. Paolo f. l. m. *Passegiata Archeologica*, base from aisles, dated 390.



(photo: Krautheimer)

110. S. Paolo f. l. m. *Passeggiata Archeologica*, base from aisles, dated 390, detail.



(photo: Krautheimer)

111. S. Paolo f. l. m. *Passeggiata Archeologica*, small base with parapet slot and column shaft, late fourth century.

A huge, richly decorated base and fragment probably made up the base drawn and measured by the draftsman of the Coner Sketchbook (fig. 137) and later cut. It was used at that time to support the left-hand column of the center arch in the medieval diaphragm wall crossing the transept. On the bases in Group II one sees holes, apparently for metal

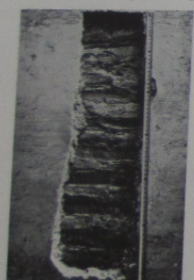
[1] Above, 98, dig. 390.

bars (fig. 108), perhaps to carry screens (or *vela*?). In Group III, there are slots, presumably to insert stone parapets (fig. 111).

Among the fragments of shafts, there are some of *pavonazzetto* and pink granite. Of the *pavonazzetto* columns in the nave, twelve (?) were re-used after repairs, four flanking the papal cathedra in the apse and four each flanking the pairs of altars at either end of the transept. The diameter of those measured is 2.22 m., corresponding to the figures of 4 *palmi*, 11 *oncie* and 5 *palmi*, 1 *oncia*, 1.10 - 1.13 m., given by Nicolai. Likewise, twelve of the aisle columns survive, re-employed in Poletti's north porch off the transept. Eight in the front row were repolished so as to be virtually unrecognizable. The four in the second row, on the contrary, were apparently not touched. The one furthest right, that is west, still carries below the top the inscription of Pope Siricius and the consular date 390; prior to 1823 it was the easternmost column in the northern aisle arcade[1]. The diameters of the columns vary from 88 to 90 cm., measured above the apophyge. Nicolai, selecting at random the second column from the west in the north aisle, gave its diameter as 4 *palmi* $^{5}/_{24}$ *minuti*, that is 0.94 m.[2]; he may have measured around the apophyge, and indeed the diameters of such bases as survive from the aisle arcade in the *passeggiata archeologica* oscillate between 0.96 and 1.06 m. The latter figure is that of the base of the Siricius column which is preserved, and its dimensions, as taken by us, coincide with Nicolai's measurements. The height of one of the column shafts in the north porch we measured as 6.95 m., a difference of only 6 cm. from the height recorded by Nicolai, 30 *palmi* 11 *oncie*, 6.89 m.; apparently, then, the shafts differed but slightly in both height and width.

b) *The Apse*

The exterior of the apse is accessible inside the nineteenth century tower in the rear of the church, for a length of *ca.* 15 m. along the middle of its curve and to nearly its full height. Likewise left-hand inside the tower, the southern of the two buttresses marked by Alippi is preserved, projecting eastward at an angle from the apse wall; its northern counterpart has disappeared. Both apse wall and buttress are thickly coated with plaster. However, two soundings have brought to light evidence of the original masonry and thus of the continued existence of large parts, if not of the entire fourth century apse wall.

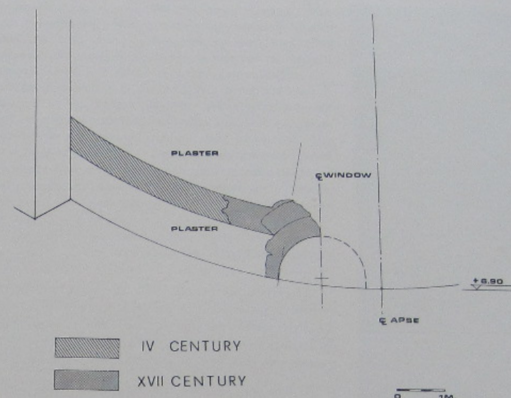


(photo: John Herrmann)

112. S. Paolo f. l. m. Apse masonry, detail.

A first piece of fourth century masonry appeared behind a rectangle of plaster, removed from the outer surface of the apse wall, some 3 $^{1}/_{2}$ m. south from its center line and at a height of 7.80 m. from the paving of the transept. The upper 15 cm. displayed a masonry of fragmentary brick laid irregularly and in a decided slant to the coursing. The bricks and their mortar joints showed that the masonry is certainly late and to be associated with a repair. The lower 34 cm. of the rectangle laid bare, on the other hand, exhibited Early Christian masonry with a modulus of 5 bricks and 5 mortar joints in 34 cm. (fig. 112).

[1] Nicolai, 10.
[2] *Ibid.*, 302.



(drawing: M. Martellini)

113. S. Paolo f. l. m. Apse, masonry.

The mortar was greyish white with an abundance of small black granules. The horizontal joints were smooth, dense and slightly concave. The height of the bricks was 3 cm., that of the mortar beds from 3.5 - 3.7 cm. When later in our investigations a strip of plaster was removed all along the southern curve of the apse, 6.22 m. long, from 1.21 m. left of the center line to 18 cm. before the buttress, the Early Christian masonry was found to extend from the buttress to a point 4.50 m. from the center line (fig. 113). Beginning there, an arch has been inserted; its masonry suggests sixteenth to seventeenth century workmanship (fig. 114).



(photo: John Ross)

114. S. Paolo f. l. m. Apse, masonry and inserted arch.

c) *The West Wall of the Transept*

Another patch of Early Christian masonry has been preserved, freed from its nineteenth

century plaster, near the south corner of the transept west wall some 3 m. from ground level (fig. 115). It shows a modulus of 5 bricks and 5 mortar beds, measuring 35 cm., with bricks 3-4 cm. high and mortar beds from as low as 3 - 3.5 cm. to 7 cm. high. The mortar is again grey with black granules. The surface of the mortar beds, flush with the bricks, appears to have weathered, but otherwise it is similar to that in the apse. The entire west wall, indeed, up to the aisle roofs may well be of fourth century date, as witness Fossati's drawing of 1829 (fig. 84); but its heavy plaster coat makes identification impossible. On the other hand, witness that same drawing, the upper portions of the wall may have been largely rebuilt between 1829 and 1840, when Cottafavi did his drawing (fig. 85).

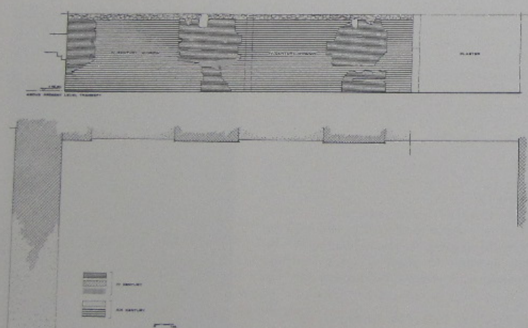


(photo: John Hermann)

115. S. Paolo f. l. m. South transept, west wall, masonry, detail.

d) *The South Wall of the Transept*

In contrast to the west wall, the south wall of the transept is preserved from the ground to a level 19.65 m. above the present transept level and thus 21.05 m. above the original level of the nave. The upper portions of the transept wall, from 15.85 m. above the present transept level,



(drawing: M. Martelloni)

116. S. Paolo f. l. m. Transept, south wall, exterior, elevation and plan.

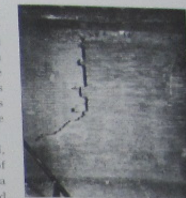
are seen in the roof space of the convent building that rises from the north wing of the thirteenth century cloister (figs. 116; 117a, b, c). At either end a buttress is well preserved projecting south. The transept wall in between is 23.60 m. long, of which 18.30 m. remain visible. The maximum height of the parts exposed in the roof space is 3.80 m. The wall leans slightly outward and the gaps between the considerable stretches of original masonry are filled in with nineteenth century brickwork.

At a level of 15.85 m. from transept pavement level, we observed at a distance of 2.70 m. from the corner of the transept and starting at the southwest buttress, a stretch of Early Christian masonry extending eastward for 1.55 m. It terminates in a jamb (fig. 117a, 119).

The wall continues faced with modern masonry for 4.53 m. (fig. 117b). From there a corresponding Early Christian stretch continues for 3.17 m. and is then terminated by another jamb (fig. 117c). A modern infill follows for 4.55 m. and is terminated by a fourth jamb; the Early Christian masonry then continues further and is terminated by yet a fifth jamb. Modern masonry follows for 2.27 m., after which the wall is plastered over.

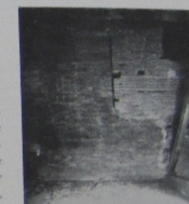
Two samples of the Early Christian masonry were measured, the modulus of the first being 32 cm., that of the second 35. cm. for five brick and as many mortar courses. The bricks are mostly red and some are fragments. The grey mortar was flush with the bricks and contained many black granules. The joints were extremely wide, 4 - 5 cm., the bricks were 3 - 3½ cm. high.

At both the west and east corners of the transept buttresses project southward. Of these, the one to the west is best preserved (figs. 118a, 119). Its thickness, 2.60 m., could be measured at ground level where its core has been exposed from the Cappella di S. Giuliano to the *passeggiata archeologica*. The core consists of *calcestruzzo* (*opus caementicium*) of the customary antique technique; along the eastern edge remnants of brickfacing remain visible. The uppermost part of the buttress is visible in the roof space along the south transept wall (fig. 119). Two stretches of fourth century brickfacing are preserved. One, at the corner of the transept wall, starts at a height of 1 m. from the floor of the roof space, reaches a height of 3.35 m. and extends for a length of nearly 4 m. At the corner which the buttress forms with the south wall of the transept, its bricks, rather than bonding with that wall, enter northward in line with the transept west wall. Apparently, then, the buttress and west wall are of one build,



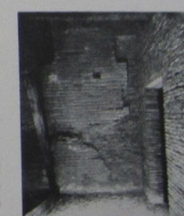
(photo: John Ross)

117a. S. Paolo f. l. m. Transept, south wall, exterior, window jamb.



(photo: John Ross)

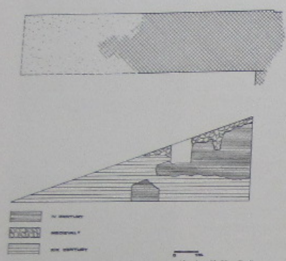
117b. S. Paolo f. l. m. Transept, south wall, exterior, window jamb.



(photo: John Ross)

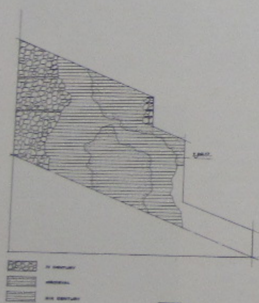
117c. S. Paolo f. l. m.T ransept, south wall, exterior, window jamb.

while the south wall of the transept was adossed against them. Needless to say, this does not indicate two building campaigns; rather, it is a case of clockwise building, a practice known from other churches in fifth and sixth century Rome. A second stretch of the same buttress, 1.20 m. long, with a maximum height of 90 cm., starts 3.70 m. from the transept wall, rising from the level of the roof space. Along the roof line it is surmounted by rubble masonry. The rest of the facing appears to be of nineteenth century date. The full length of the buttress cannot be determined, but it seems to have been roughly 10 m. long. Its westward face rises above the *passeggiata archeologica* covered by a thick plaster coat. Alippi's plate, however, shows that even then it had largely lost its facing (fig. 88). The south face of the buttress at the eastern end of the south transept remains visible above the roof of the convent wing that leans against the south transept wall (figs. 118b, 120, 121.) Adjoining the corner of the transept a stretch of *opus caementicium*, with levelling brick courses, remains exposed for a length of over 2 m. This is followed by a stretch



(drawing: M. Martelloni)

118a. S. Paolo f. l. m. South transept, west buttress, plan and east face.



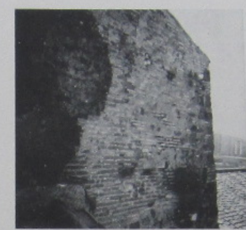
(drawing: M. Martelloni)

118b. S. Paolo f. l. m. South transept, east buttress, west face.



photo: Joan Ross

119. S. Paolo f. l. m. South transept, west buttress and west jamb of first transept window, seen from east.



(photo: Krautheimer)

120. S. Paolo f. l. m. South transept, southeast buttress, from west.



(photo: Krautheimer)

121. S. Paolo f. l. m. South transept, southeast buttress from west, detail.

of nineteenth century brickfacing, while further south and including the southern end of the buttress, medieval facing in brick takes over, the corner reinforced by stones. The thickness of the buttress could not be measured; nor were we able to see its eastward face.

2. Literary evidence

Nicolai's description of San Paolo, accompanied by Alippi's plates, is the fullest written account of the church as it stood just prior to 1823. The general description of its plan and elevation, contained in Chapter XV of his book, serves as the basis for the preliminary presentation of the old basilica we have given above. There is no need to revert to it in general. But we shall have to discuss some passages of Nicolai and of other observers not taken up previously and which throw light on essential questions regarding the design of the original building and its subsequent history.

A first point concerns the respective levels of the transept and nave, as they stood prior to 1823 and after the rebuilding as shown below (fig. 145). In the present basilica, as rebuilt from 1831 on, the level of the transept rises 0.53 m., that is three steps above the level of the nave. Before 1823, the nave floor was considerably lower than at present. It was originally proposed to raise it 5 *palmi*, 1.115 m.; but Letarouilly gives the actual figure, 0.892 m., 4 *palmi*, while another contemporary source speaks of "*ben quattro palmi circa*", i.e. slightly more[1]. We therefore accept a figure of 0.90 m. The transept at that time rose five steps above the nave, each step according to Nicolai 10 *oncie* (18.5 cm.) high, a total of 0.925 m. The transept level in 1823 was thus 0.51 m. below the present one.

[1] (P. Belli), *Dubbi*, 46, 53, 60 proposed 5 *palmi* or more; see however, Letarouilly, *Edifices*, 649; Melchiorri, *Guida Metodica di Roma*, Rome, 1838, 212, says "*ben quattro palmi circa*".

In chapter XV of his book, Nicolai provides the basic measurements of the structure both in plan and elevation[1]. We have tabulated them together with the comparative figures furnished by other observers, preceding them or contemporary with them. The tabulation will be found on pages 150 ff. Suffice it to remark that only one source, Carlo Fea, gives the measurements of the foundation walls: 5 *palmi* thick in the aisles, 8 *palmi* in the nave[2]. Finally, another source informs us that the foundation of the apse, notwithstanding its bearing load, was found to be quite shallow, only 17 *palmi* deep[3].

In chapter XIV Nicolai discusses at length intervals, sizes and the types of columns throughout the structure. Among the nave columns, he distinguishes two groups: twenty-four columns with fluted monolith shafts of *pavonazetto* marble, "*pavonazetto di un solo pezzo scanalate da un terzo in su*"[4], and sixteen with shafts of what he believed to be Parian marble[5]. (Alippi, in plate I, identified them as *marmo salino*; the material, not Parian, will be discussed below.) Of the *pavonazetto* columns, thirteen stood in the south colonnade, eleven in the north colonnade; the group to the south comprising the second through fourteenth columns, that to the north the second through twelfth. Nicolai described the bases of the *pavonazetto* columns as Attic, some buried slightly below the pavement. The capitals were Corinthian, but, as he says, largely of stucco, "*in gran gran* (sic!) *parte di stucco*"[6]; we shall revert to his statement. The measurements varied slightly and Nicolai gives two samples: 46 *palmi* 9 *oncie* 4 *minuti* and 45 *palmi* 3 *oncie* for their total height, 10.45 m. as against 10.19 m.; the differences extended to all parts, height and diameter of the shafts and height of both capitals and bases. The "Parian" columns, that is the first north and south, the last eight north and the last seven south, were likewise fluted and also varied among one another. Again Nicolai had two samples measured, one with a total height of 47 *palmi*, 3 *oncie*, the other of 45 *palmi* 10 *oncie*, 10.44 and 10.22 m. respectively; but he pointed out that these columns — and he seems to refer primarily to the shafts[7] — were inferior to the *pavonazetto* columns, in material as well as in the regularity of their dimensions. The capitals of these "inferior" columns, Nicolai mistook to be whitewashed travertine, "*travertino intonacato di calce*"[8]; but he does not mention their type, whether Corinthian or not, nor that of their bases. Many of the bases of both groups of columns were partly buried in the pavement[9]. While he believed the *pavonazetto* columns to be spoils from the Mausoleum of Hadrian and perfect examples of classical workmanship, he assigned the "Parian" columns and their capitals to the period of Theodosius.

The shafts of the aisle columns, Nicolai describes as being all of white marble — clearly a mistake — tapering and on the whole all of different sizes, "*generalmente tutte di misura diversa*"[10]; he gives only one sample, the total height of the column with its base and capital being 38 *palmi*, 8.47 m. The capitals, full leaf capitals as we know, he does not mention; nor does he refer to their bases. On the other hand, he describes in detail the columns supporting the triumphal arch: total height 59 *palmi* 6 *oncie* 2½ *minuti*, 13.28 m.; shafts of what he called Hymettos marble and of slightly different diameters; Ionic capitals and Attic bases. Finally, the eight columns supporting the diaphragm wall in the transept were all different in size and material: the two large ones at the center arch were of red granite, 39 *palmi* 7 *oncie* 2½ *minuti*, (8.82 m.), high, comprising base and capital, but different in diameter and placed on incompatible bases, to the south "*granito bigio di cattiva forma*", to the north "*...attica di marmo, il doppio spaziosa e tutta coperta di ornati, assai belli*"[1]. Known from the Codex Coner (fig. 137), the base in large part survives in the *passeggiata archeologica* of S. Paolo, along the south flank. Above the Ionic capitals rose a piece of cornice and above that a stretch of masonry to reach the height needed for the springing.

[1] Nicolai, 303, 307.
[2] Fea, *Basilica Ostiense*, 1833, 18.
[3] Borgnana, *Il nuovo campanile della Basilica Ostiense*, Rome, 1847, no pagination.
[4] Nicolai, 301.
[5] *Idem.*, 301.
[6] *Idem.*, 301.
[7] *Idem.*, 302.
[8] *Ibid.*
[9] *Idem.*, 306 f.
[10] *Idem.*, 302.

Three further elements, not included in our general description but mentioned by Nicolai, must be recorded for further reference. The bases of the colossal columns at the triumphal arch, buried below the upper three of the five steps ascending to the transept, had been uncovered and were found to rest on the second step, 1 *palmo*, 8 *oncie*, 0.36 m., above nave level[2]. The transept was paved in *opus tesselatum*[3], what we call Cosmatesque. Finally, the travertine of the nave arcade above the *pavonazetto* columns — and, it seems, only above these — was found to be cut back to form a rudimentary impost block and to avoid the upper wall's bearing down on the corners of the capitals[4].

Prior to Nicolai's monograph, descriptions of S. Paolo are rare and uninformative. The one exception is Panvinio's manuscript record of *ca.* 1560 — far more interesting than the version given in his guidebook of 1570 — and the supplementary pages in Ugonio's *Stationi*, 1558. Panvinio's manuscript, published and commented on by Pesarini[5], adds to the knowledge we gain from Nicolai a good deal of information, often on elements no longer seen by the latter. Panvinio saw the remains of the atrium, but only five of its columns were still in place. He saw the old narthex resting on ten columns and four piers, the latter obviously flanking the entrance from the narthex to the lateral porticoes of the atrium. The measurements he provides for the atrium as well as for the church are incompatible with those given by other observers, as witness our tabulation[6]; he may have used a foot measure unintelligible to us. He noted the medieval campanile, and, leading into the nave and aisles, five doors (not seven, as in Nicolai) with their inscriptions. Inside, he saw forty columns in the nave and forty in the aisles; likewise, on either side, and corresponding to the intercolumniations, he saw twenty-one nave and aisle windows, in their majority blocked. He noted the medieval ambos in the nave and, at the entrance to the apse, a pergola on six columns, presumably also medieval. Finally in the transept, below the triumphal arch, he saw a chancel: raised above transept level; enclosed by marble parapets supporting twenty columns of porphyry or granite; with a Cosmatesque pavement; and, sheltered in the rear behind the High Altar of Saint Paul, the papal cathedra. Below this enclosure was a crypt, linked by legend to Saint Bridget, its entrance bearing the inscription of Leo III; leading from it (Panvinio writes by mistake "from the crypt of Saint Julian") two blocked-up doors originally communicated with a subterranean passage below the south transept, believed to be a cemetery. His description of the chancel and crypt is clarified by Ugonio's in 1588: of the chancel enclosure, at that time, the cathedra and the columns

[1] Nicolai, 303.
[2] *Idem.*, 303.
[3] *Idem.*, 307, 308.
[4] *Idem.*, 303.
[5] Pesarini, *op. cit.*, 1913.
[6] Below, 150 ff.

had been removed and the former placed in the apse. Steps behind the chancel descended to the crypt whose portal bore the inscription of Leo III. In addition, there was a second crypt, dedicated to Saint Julian, below the apse; it had been walled up some ten years prior to Ugonio's writing and he does not describe it. But long before, in 1452, Muffel had seen it: an anular crypt underground as at St. Peter's, "*ein gruft und umbganck als zu sand Peter unter der erden*"[1].

Early literary evidence on the building is altogether rare. Prudentius in 402/3 saw the construction completed, including the fourfold order of supports, and the decoration well advanced[2]. He speaks of gilded roofbeams, "...*bratteolas trabibus sublevit* (*scil.* Honorius)", and coffered gilded ceilings supported by columns of Parian marble, "...*subdidit et Parias fulvis laquearibus columnas, distinguit illic quas quarternus ordo...*". But it is unlikely that he means to distinguish between gilded truss roofs (in the nave and transepts ?) and coffered ceilings (in the aisles?); more plausibly the beams were part of the coffered ceilings. The Parian columns are the Hymettean columns of the nave, rather than the grey and white marble columns of the aisles. He also noted floral mosaic on curved arches, "...*tum camiros hyalo insigni varie cucurrit arcus, sic prata vernis floribus renident...*". He may have alluded to a decoration of the soffits in the nave arcade, similar to that of fifth century date, which survived till 1823; but, since nothing is known of such decoration preceding that of Leo I, the reference may as well be to the triumphal arch or to the apse. After Prudentius, though, no reference to the structure or its decoration appears for a thousand years, except for a passing remark of Hadrian I, regarding the mosaic on the triumphal arch[3]. Even later, beginning with Muffel and Fra Mariano, guide books for pilgrims and secular visitors continuing through the eighteenth century are apt to dwell on the legends proliferating around Saint Paul's sojourn in Rome, and on the relics of the Apostle and other martyrs and saints kept in the church. Panvinio and Ugonio remain exceptions. Indeed, it is remarkable how the treatment, as found first in Fra Santi's *Cose maravigliose* in 1588, is repeated almost unchanged far into the seventeenth century. Even where the description is enlarged or altered, as in Panciroli's *Tesori nascosti* and its filiations, little attention is paid to the structure; at most the overall measurements, as tabulated by us, and the number of columns and their materials are recorded. Vasi's *Itinerario*, late in the eighteenth century, is still notably reticent. Attention was apparently centered on St. Peter's to such a degree that S. Paolo was given short shrift; and certainly its plain volumes did not attract the eye of the average pilgrim or tourist in the seventeenth and eighteenth centuries. Educated visitors reacted differently, as witness the engravings and paintings provided for the well-to-do tourist trade by Piranesi or Pannini and their imitators. But, among written records, Angelo Uggeri's was perhaps the first to stress the beauty of the structure: "there is nothing more attractive in architecture," he says, "than colonnades laid out with order and regularity... which let us enjoy the entire extent and capacity of a building so that the eye in penetrating between the shafts of the columns can measure the farther ends of the temple. Wherever one turns through this forest of columns, one is ravished by wonder and enchanted by the ever new change of perspective which renews itself in so many great, pleasant and interesting views"[4].

[1] MUFFEL, *Beschreibung der Stadt Rom*, 1452, Tübingen, 1876, 30.
[2] Above, 98, dig. 395-402/3.
[3] Above, 100, dig. 772-795.
[4] *Edifices de la décadence, part II du supplément aux journées pittoresques*, 35, as quoted by Nicolai, 302 f.

Except for Nicolai's work, then, literary evidence is scarce and it provides little information about the state of the basilica prior to 1823.

3. Graphic evidence

The survival of the Early Christian church, virtually unaltered in its general appearance until 1823, presented ample opportunity for the precise recording of its form. Reliable plans, sections and some elevations exist with sufficient detail to permit an accurate reconstruction of most elements of the basilica with the exception of its atrium. For this reason, it is less important that there are fewer views of old S. Paolo than of other Roman basilicas and that these contribute significantly less to our knowledge of it.

1. *General*

The plan, sections and elevations prepared by the architect Andrea Alippi as illustrative plates to Nicolai's text comprise the largest and most reliable record of the form of old S. Paolo a decade before its destruction[1]. The plates, which are drawn to scale in Roman *palmi*, have been shown to be accurate by every control to which they have been submitted. All discussions of the plan and superstructure of the church must, therefore, begin with Alippi's work. Thorough as was his survey, the following are not included in his plates: an elevation of the eastern façade facing the Via Ostiense; the north and south elevations and interior elevations of the western wall of the nave; and either the western or eastern wall of the transept. Since Alippi was concerned only with depicting the standing building, at the west he represents only the narthex of Benedict XIII. There are no written dimensions on Alippi's plates, a defect made up only in part by the measurements provided by Nicolai's text. Dimensions scaled from Alippi's plates, however, agree with those in that careful text and with those written on the plan reproduced by Letarouilly. Thus it is reasonable to take the dimensions, scaled from Alippi's plates but lacking control figures, as equally reliable.

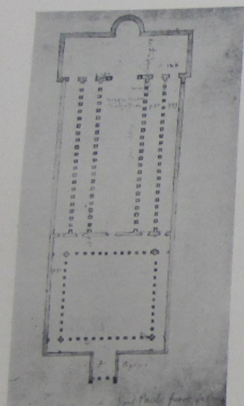
Letarouilly, whose work on S. Paolo began before the fire, states that its completion, was based on Nicolai[2]. This work, therefore, is at best only a partial control of Alippi's and Nicolai's dimensions, as it is impossible to distinguish between what he measured and what he borrowed from them. Nonetheless, his plates, which include a plan, a longitudinal and a transverse section, are important in that the dimensions, in meters, are written on them and need not be scaled. Alippi and Letarouilly are the only graphic sources that seriously treat both the plan and the superstructure. It is, therefore, advisable to separate these categories of evidence henceforth.

2. *Plans*

The earliest preserved plan of the church and its atrium is a drawing by an anonymous hand now in the Albertina (IT AZ 703; our fig. 122). It is a carelessly ruled pen and wash drawing

[1] Above, 106 ff., 122, 127 f. and pls. III, IV, figs. 88, 89.
[2] LETAROUILLY, *Edifices*, III, 681.

over a stylus layout, roughly drawn to scale; there are, however, errors, e.g. the narrow diameter of the apse. It bears no graphic scale, but the principal horizontal dimensions of the nave and the transept, given in *palmi*, as well as a few minor measurements, are written on the plan. The character of the handwriting, both the letters and the numerals, suggest that the drawing was made in the early sixteenth century, possibly even a decade or two earlier[1]. The representation of the basic architectural form of the church is clearly the author's aim, as he omits all liturgical constructions, including the raised chancel. Nor does he show the steps ascending from the nave to the transept. At the west façade, he omits the base of the campanile at the northwest corner as well as two of the three doors leading from the narthex to the main nave. Judging from Panvinio's description of an atrium in ruins, later in the century, the decastyle quadriporticus represented in this plan appears to be a partial restoration based on the narthex, which was intact, and the evidence of the delapidated forecourt. Of special interest is the propylon that projects beyond the western wall of the atrium with its triple portal and two projecting columns. Slightly altered, these same elements also appear in the next oldest and even more informative plan of the church. That plan is by Giovanni Colonna da Tivoli (figs. 123a, b) and it covers two longitudinal sheets of a notebook in the Vatican Library, Vat. lat. 7721, dated *ca.* 1554[2]. In pen and wash, it is a combination of ruled and free-hand drawing over a pencil layout. It is not drawn to scale, but it contains an abundance of dimensions written in *piedi*. The drawing acquires its special importance from the fact that its dimensions coincide with those of Nicolai, Alippi and Letarouilly in all major respects, to wit: the length and width of the nave and its constituent aisles, the length and width of the transept and its medieval diaphragm wall, and the width of the apse. He represents the original twenty-one windows in each of the lateral walls of the nave although most of them had been blocked by his day. He gives the length of the two massive buttresses at the northern end of the transept as 45 and 40 *piedi* — the latter northeast — and at the apse as 30 *piedi* each. South of the latter, he shows the chapel of the Holy Sacrament, later remodelled by Carlo Maderno, and a corridor between the Via Ostiense and the southern arm of the transept that

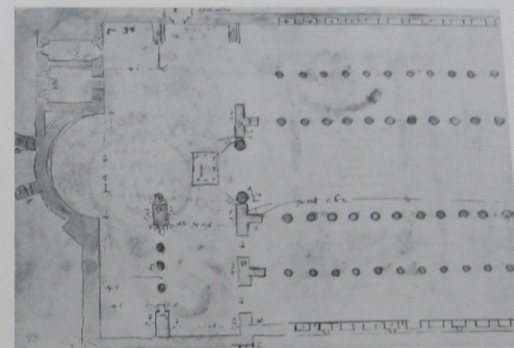


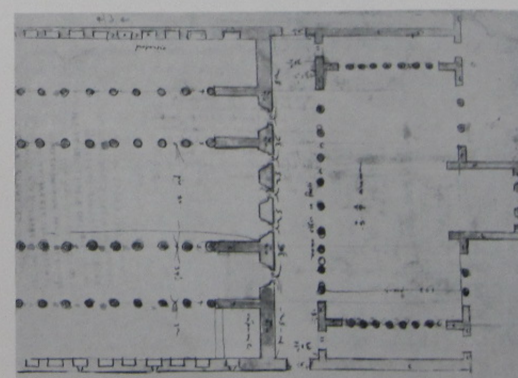
(Vienna, Albertina IT AZ 793)

122. S. Paolo f. l. m. Anonymous, plan of basilica and atrium, 1490-1510.

[1] We are indebted to Prof. C. L. Frommel for his expertise of the drawing and for his informed opinion concerning its date.

[2] The dating rests on an autograph note, f. 61r, "*in roma per giovanni colonna da Tivoli nel 1554 di ottobre*".





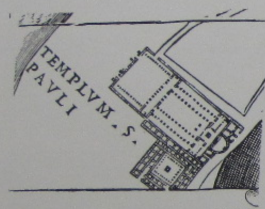
(Vat. lat. 7721)

123a, b. S. Paolo f. l. m. Giovanni Colonna, plan of basilica and atrium, 1554.

still appears as the entrance from the east in the Nicolai-Alippi plan. The northern side of the east end is unencumbered by structures. However, like the Albertina Anonymous, Colonna was unconcerned with the liturgical features of the basilica, showing only the main altar and that only schematically, and omitting the steps from the nave to the transept.

The author's precision elsewhere increases the reliability of his measurements for the atrium. The atrium represented differs from that shown in the Albertina drawing as it appears to be closed by a *porticus triplex* comprising the narthex, the northern and southern arms of the forecourt, and only a columnar screen at the west with a projecting propylon—a complete fourth arm does not appear. As in the previous drawing, Giovanni Colonna's arrangement appears to be a restoration based on the imperfect evidence available to him.

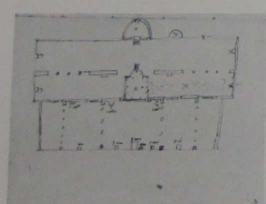
Bufalini's map of Rome of 1551 shows a plan of S. Paolo a few years before Colonna's drawing (fig. 124). Like most of the detailed plans on that map, that of S. Paolo is an abbreviated sketch that presents only the building's salient features. The most interesting element of the Bufalini plan shows yet a third version of the atrium in the sixteenth century. The three-armed portico parallels that of Colonna, but the projecting propylon is replaced by two entrances toward either end of the western wall, each flanked by columns. Of importance, too, is the appearance of an access road from the Via Ostiense to a gate toward the western end of the north wall of the forecourt. A gate at that point appears in later *vedute* beginning with Lafréry's *Sette Chiese* view of 1575 (fig. 138).



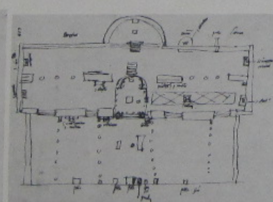
(Bufalini, Mdp)

124. S. Paolo f. l. m. Bufalini, plan of basilica and atrium, 1551.

Two rough pen sketches (figs. 125a, b) illustrate Onofrio Panvinio's manuscript description of S. Paolo on fols. 417 and 418 in Vat. lat. 6781. Unlike the previous three authors, Panvinio's interest



(Vat. lat. 6781, f. 418)



(Vat. lat. 6781, f. 417)

125 a, b. S. Paolo f. l. m. Panvinio, sketchplans, *ca.* 1560.

is focussed primarily on the liturgical features of the church; the drawings, therefore, provide no new information about the architectural form of the building. The text that these sketches illustrate having been discussed above, it is sufficient to deal only with those elements that appear more clearly in the drawings than in the text[1]. They principally clarify the arrangement of the transept around the middle of the sixteenth century. They show the raised chancel at the High Altar — Panvinio calls it the choir — which was laid out by Gregory the Great, extensively remodelled by Leo III and removed by Sixtus V. Its form was that of an apsed nave in miniature, raised on a platform with its perimeter lined with columns — twenty according to the text, although neither sketch shows that number. The altar over the Apostle's tomb stood near the center. The sketches omit the ciborium mentioned in the text. The episcopal throne appears back in the apse of the chancel. The chancel was reached from the transept by a few steps on its southern flank. Fol. 417 (fig. 125 b) shows the chancel extending the full width of the triumphal arch, with perhaps a westward projection toward the west face of the transept wall with the colossal Ionic columns contained in re-entrant corners. On fol. 418 (fig. 125a), however, it appears to stretch only between the faces of the columns. It is unclear, from these two arrangements, whether the chancel began at the topmost of the five steps that separated the nave from the transept or whether it extended over some of them. Thus the sketches do not help in determining when the transept pavement was raised from the level of the Ionic column bases, 36 cm. above the nave, to its ultimate level *ca.* 80 cm. above it, if indeed it was raised twice. The plans show access to the *confessio* beneath the chancel by means of a straight flight of steps behind the chancel on the axis of the basilica.

Panvinio's sketches are also unique in showing the raised apse. At the center of its chord at the raised level, he shows the Muses sarcophagus mentioned in his text. It apparently projected forward, flanked on either side by a few steps up from the transept. A straight flight of stairs in front of it led down to a second "confessio" containing the altars of Sts. Celsus and Julianus. Panvinio does not show the screen of six columns along the front of the apse mentioned in his text, but he does show the altar of St. Timothy the Priest, *magnum et vacuum*, in the center, and at the apse's apex the strigillated sarcophagus altar of the five Holy Innocents, without the two columns stated in his text to have supported its ciborium. To the south of the raised chancel, Panvinio indicates a vaulted passage below the transept and leading southward. This he identifies as a corridor accessible from the *confessio* below the High Altar leading to a "cemetery in which many thousands of martyrs are buried[2]". He indicates the altar in the form of a well-head in the transept above the corridor, approximately where the paschal candelabrum now stands.

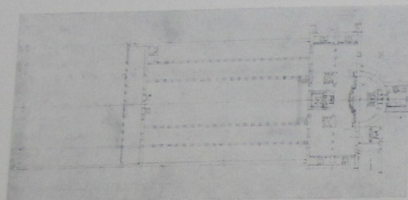
The first two plans of S. Paolo accurately drawn to scale are found in the Albertina. Both may be dated around 1645. The smaller one, a light ruled pencil drawing by Francesco Borromini (IT AZ 704), shows the church and atrium drawn over an earlier version on a larger scale that represented only the church (fig. 126). The larger Albertina drawing (IT AZ 705), the right side of which is missing, has been attributed to Carlo Rainaldi, although it bears brief annotations in what appears to be Borromini's hand (fig. 127). The drawing is in pencil with light blue wash and represents only the church and narthex. Despite their professional character, these two plans convey little information not elsewhere available. Both show what may be interpreted as a pilaster buttress at the northern junction of the apse and the east wall of

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[1] Above, 129 f.

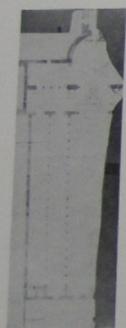
[2] PESARINI, *op. cit.*, 1913, 425, with the misreading "*Juliani*" for "*Lucine.*"

the transept. This may be a regularized version of the diagonal reinforcement found in the same place in Giovanni Colonna's plan. Such would agree with the evidence of the two great buttresses east of the apse that, with the exception of these two mid-seventeenth century



(Vienna, Albertina, IT AZ 704)

126. S. Paolo f. l. m. Borromini, plan of basilica, *ca.* 1645 (?).



(Vienna, Albertina, IT AZ 705)

127. S. Paolo f. l. m. Rainaldi or Borromini, plan of basilica, fragment, *ca.* 1645.

plans where they appear parallel, are always shown to project radially. Both plans document the closing of the arched openings to the lateral porticoes of the atrium at either end of the narthex, which still appear open in Giovanni Colonna's plan. At the west of the church Borromini represents a square walled forecourt with no visible access from the north or south and with foundation walls of the northern, western and southern porticoes lightly ruled in. The western façade, delineated in the lightest of lines, is a replica of that of the narthex. In the light of the characterization of the previous plans, this feature of Borromini's plan must represent his interpretation of the meager evidence for a reconstruction of the atrium façade.

Frequent reference will be made to Letarouilly's and especially to Alippi's plan in Nicolai (our pl. III) in the following section. Their evidence for the dimensions of the church along with those provided by the Anonymous of the Albertina, Giovanni Colonna da Tivoli and other sources are tabulated below.

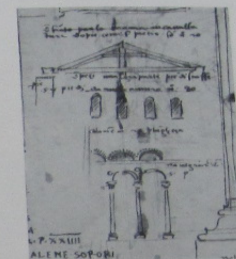
Graphic sources for the pre-Theodosian tomb of the Apostle have been discussed in Section E I.

3. *Sections and elevations*

The earliest known section-cum-elevation of S. Paolo is in Giovanni Colonna's sketchbook (fig. 128). It represents in free-hand an interior elevation of two bays of the nave up to and including the clerestory windows. At the level of the roof, the author turned his point of view through ninety degrees in order to show the roof construction in section. The thickness of the clerestory, five *piedi*, and the span of the roof truss, eighty *piedi*, agrees with the corresponding dimensions in Colonna's plan. The paucity of elevations and sections of

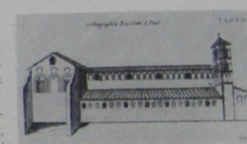
S. Paolo after Colonna's drawing and before the nineteenth century is due to the absence of major alterations in the sixteenth and seventeenth centuries. Even Sixtus V's work was essentially one of furnishing, with no structural changes or additions required.

Two north elevations of the exterior convey an idea of the state of the building in the seventeenth and eighteenth centuries. The engraving published in Ciampini's *Monimenta* in 1693 (fig. 129), while awkwardly drawn and in large part a restored view, nevertheless clarifies a number of details: three large round-headed windows in the north wall of the transept had been blocked and two rectangular windows inserted; above, three oculi were likewise blocked, while a round-headed window was opened in the gable. Of the twenty-one clerestory windows on either side of the nave, only the fifth, tenth, fifteenth and twentieth remained open, the others were blocked. In the aisle, of twenty round-headed windows, seven remained open, the rest were blocked but carried *bifore* tracery fillings. Seroux d'Agincourt's engraving, a century later, shows more precisely the transept wall in the same state (fig. 87); on the apse, his draughtsman noted a projection, level with the springing of the vault inside — did he mean to mark a setback? In the aisle wall, the fenestration had been changed by inserting below the tracery windows seven rectangular windows; in the clerestory wall, the draughtsman apparently did not finish showing the windows, blocked or open. But like Ciampini's, Seroux d'Agincourt's engraving shows at the westward end of the outer north aisle the campanile and, in the northern narthex wall, two blocked, arched windows.



(Vat. lat. 6781)

128. S. Paolo f. l. m. Giovanni Colonna, nave elevation and truss roof, 1554.



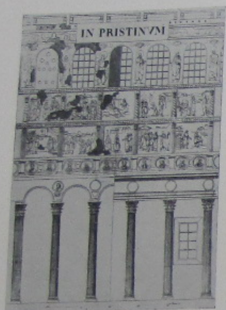
(Ciampini, Vetera Monimenta)

129. S. Paolo f. l. m. Exterior elevation from north, 1693.

Uggeri, in proposing to replace the nave arcades of the ruined church by a trabeated order, illustrated the project by a "before and after" elevation, with a scale in French feet (fig. 130)[1]. In the arcade zone, it appears to show the eastward end bays of the nave: the half pier terminating the arcade is fluted, carries a Corinthian capital and a low "impost slab" and thus would seem to supplement Alippi, who in his elevation of the north wall omitted both capital and "impost slab". However, Uggeri's end pier solution is in contrast not only with Alippi's, but also with the anonymous drawing to be discussed later (fig. 131). Besides the end pier, Uggeri shows two fluted Corinthian columns, again with smallish, low "impost slabs". The wall above the arcade zone appears to be represented even less reliably. The cornice is shown flatter than it actually was and the two tiers of frescoes are framed, those above by twisted columns, those below by pilasters, and, while this coincides with Alippi's elevation, the latter feature is

[1] Uggeri, *Della basilica di S. Paolo*, Roma, 1823.

contradicted by other *vedute*, such as the Anonymous' and Piranesi's (figs. 131, 91), both showing twisted columns above and below. Most important, Uggeri's elevation shows at its left edge the beginning of a window above the end pilaster, where no such window could have existed. In short, the elevation cannot be entirely trusted, but it remains important for envisaging details of the arcade, such as the low "impost slabs", presumably the cut-back lower ends of the travertine blocks, as described by Nicolai. Other details likewise should be taken into consideration, such as the windows in the clerestory, the first closed with a transenna slab pierced by holes, the third walled up in brick; and standing saints between the windows[1]. Where the murals were damaged, Uggeri saw the brickwork of the nave wall and, in the clerestory zone, double voussoirs forming the window arches. Very close to Uggeri's is an anonymous engraving of an elevation of the same part of the nave, but with a section of the triumphal arch and with a scale in *palmi* (fig. 131). It is the largest scaled drawing to represent the clerestory windows and the difference in the nave and transept levels in 1823; it also shows the travertine construction of the nave arcade and, embedded in the brickwork of the nave wall, three relieving arches superimposed.



(Uggeri, *Della basilica . . .*)

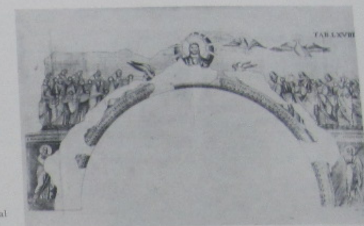
130. S. Paolo f. l. m. Uggeri, nave elevation looking south and rebuilding proposal, 1823.

Ciampini's elevation of the mosaic of the triumphal arch (fig. 132) and Uggeri's depiction of the arch after the fire of 1823 (fig. 133), as seen from the transept, document the size of the original span and the nature of Leo the Great's reinforcing lining. Uggeri's engraving, which represents the eastern face of the arch, is drawn to scale and thus shows the exact depth of the lining arch to be 4 *palmi*. But we note that Uggeri, rather than simply presenting the condition of the arch as of 1827, shows a proposed further reinforcement by dovetailing into that lining an additional inner arch *ca.* 5 *palmi* deep. A corresponding inward shift of the supporting Ionic columns and their capitals and surmounting impost cornices caused the reinforced arch to bear down on the core of the capitals and cornices rather than on their



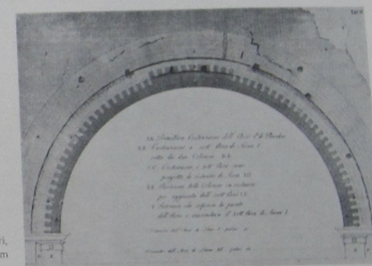
131. S. Paolo f. l. m. Anonymous, nave elevation and rebuilding proposal, *ca.* 1840.

[1] They had long given way to a pilaster order. Uggeri presumably knew them from Eclissi's copies in Barb. lat. 4406 (WAETZOLD, *Kopien*, 62).



(Ciampini, *Vetera Monimenta*)

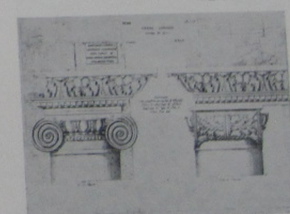
132. S. Paolo f. l. m. Triumphal arch and mosaic, 1693.



(Uggeri, *Memorie . . .* 1827)

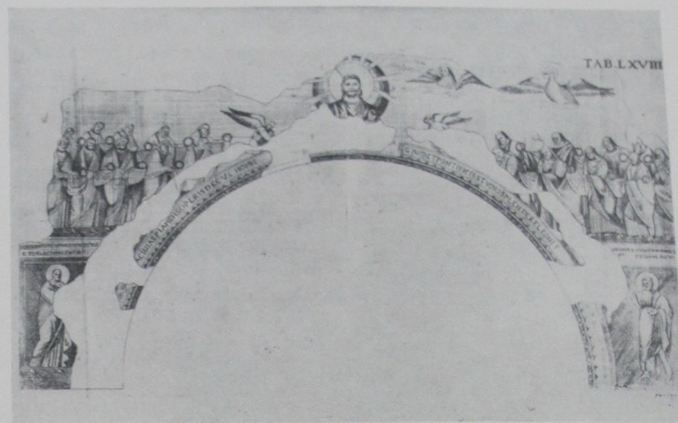
133. S. Paolo f. l. m. Uggeri, triumphal arch seen from transept, 1827.

vulnerable projecting ends. The operation, as proposed, reduced the span of the arch from 75 *palmi*, as under Leo I, to 65 *palmi*. Another engraving of Uggeri's, published the same year, but possibly prior to the elevation of the arch just discussed, shows, drawn on a large scale, the capital and impost cornice of the left-hand Ionic column (fig. 134). The cornice in particular is elegantly carved, though it was damaged on the nave side. Above the impost rest what seem to be two stone blocks side by side running north and south; covered by the mosaic, they are set



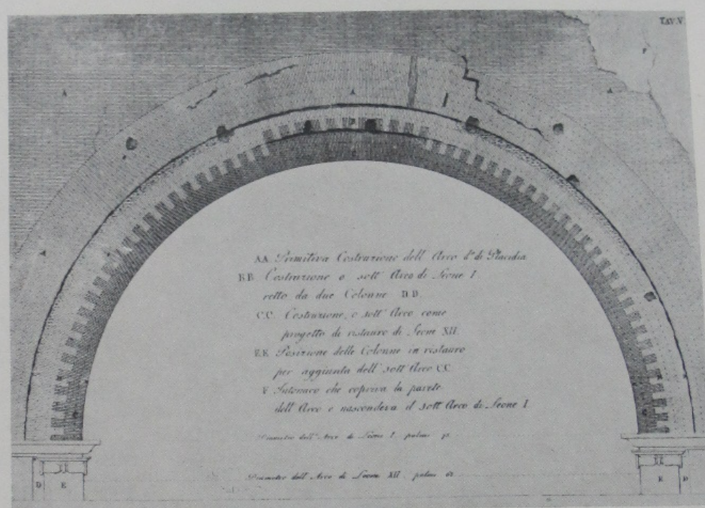
(Uggeri, *Commissione speciale . . .* 1831)

134. S. Paolo f. l. m. Uggeri, Ionic capital and impost of triumphal arch, north, 1831.



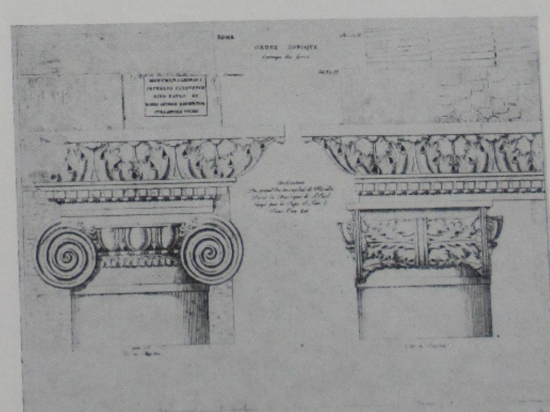
(Ciampini, *Vetera Monimenta*)

132. S. Paolo f. l. m. Triumphal arch and mosaic, 1693.



(Uggeri, *Memorie* . . . 1827)

133. S. Paolo f. l. m. Uggeri, triumphal arch seen from transept, 1827.



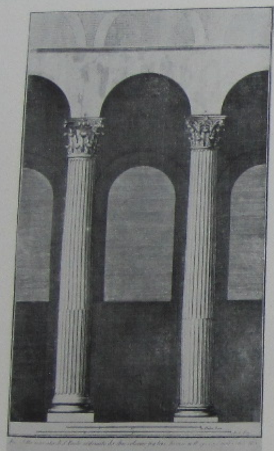
(Uggeri, *Commissione speciale* . . . 1831)

134. S. Paolo f. l. m. Uggeri, Ionic capital and impost of triumphal arch, north, 1831.

vulnerable projecting ends. The operation, as proposed, reduced the span of the arch from 75 *palmi,* as under Leo I, to 65 *palmi*. Another engraving of Uggeri's, published the same year, but possibly prior to the elevation of the arch just discussed, shows, drawn on a large scale, the capital and impost cornice of the left-hand Ionic column (fig. 134). The cornice in particular is elegantly carved, though it was damaged on the nave side. Above the impost rest what seem to be two stone blocks side by side running north and south; covered by the mosaic, they are set

back 1.8 *palmi* from the edge of the cornice and serve as a springer for the arch. The latter, set back 1 *palmo* from the springer, was formed by a triple voussoir of bricks, each 2.8 *palmi*, 2 R. ft., long. While the springer block is missing in Uggeri's elevation drawing of the arch, it appears in other representations (figs. 142a, 144).

Among detailed and partial elevations, Seroux d'Agincourt's engraving of a bay of the nave arcade is useful on account of its large size and its graphic scales in *palmi* and Parisian feet (fig. 135). It has been identified with the fourteenth bay in the south arcade, this being the only arch supported to the right by a *pavonazzetto*, to the left by a "Hymettean" column, as they are described in Seroux d'Agincourt's short text[1]. The *pavonazzetto* column is carrying a Corinthian capital of obviously Imperial date, the other a Composite capital. Both capitals are drawn large scale in two more plates of Seroux d'Agincourt's publication, the Composite capital with damaged corner volutes (figs. 136a, b). Seroux d'Agincourt's Composite capital has been said to be a misinterpretation of the fifth century nave capitals, two of which are preserved[2]. We shall discuss the question later. The profile of the base shown on the same plate is an inexact depiction of one of the late antique Attic bases from the arcade.



(Seroux d'Agincourt, *Histoire de l'Art*)

135. S. Paolo f. l. m. Seroux d'Agincourt, elevation, nave bay south, before 1789.

The Coner Codex in the Sir John Soames Museum contains the earliest preserved drawing of a decorative member of S. Paolo, a base "...*ecclesia S. Pauli*," and gives its dimensions (fig. 137). They are remarkably large: length of the plinth, 3½ *braccia*; upper diameter of the base, 2 *braccia* 52 *minuti*; height, 79 *minuti*. Fragments of the base survive in the *passeggiata archeologica* along the south flank of the basilica and they coincide with the draughtsman's dimensions. The base, a work of the Severan period, stood under the left-hand column of the center arch in the medieval diaphragm wall of the transept, "*una base attica di marmo, il doppio spaziosa e tutta piena di ornamenti assai bella*"[3]. The base thus does not enter into the scope of our investigations and we mention it only *pro benefitio inventarii*.

[1] Martinez y Fazio, *op. cit.*, *R.Q. Schr.*, 58 (1963), 2 f.
[2] Deichmann - Tschira.
[3] Nicolai, 303.



(Seroux d'Agincourt, *Histoire de l'Art*)

136a. S. Paolo f. l. m. Seroux d'Agincourt, Corinthian capital and base of nave arcade.

c) *Views*

Genuinely instructive views of S. Paolo f. l. m. from the sixteenth, seventeenth, eighteenth and early nineteenth centuries are relatively scarce. In most general views there is little to be seen that is not better represented by Alippi's elevations. Among views of S. Paolo the one in Lafréry's *Sette Chiese* sheet of 1575 is the earliest known (fig. 138). It established the all but habitual



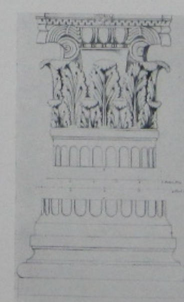
(Codex Coner, fol. 149)

137. S. Paolo f. l. m. Anonymous Coner, ancient base re-used in medieval diaphragm wall, *ca.* 1515.



(Lafréry, *Sette Chiese*)

138. S. Paolo f. l. m. Lafréry, view of church and atrium from northwest, 1575.



(Seroux d'Agincourt, *Histoire de l'Art*)

136b. S. Paolo f. l. m. Seroux d'Agincourt, Composite capital and base of nave arcade.



139. S. Paolo f. l. m. Maggi, view of church, atrium and convent from west, 1600.

practice of representing the exterior from the northwest, and the print itself was often copied, sometimes in reverse or with variants, for more than a century after its publication, beginning with that of Fra Santi in 1588 and continuing later till 1725 [1]. Of particular interest in Lafréry's view is the atrium. The extant, arcaded narthex appears in abbreviated form with what seem to be low parapets introduced between the columns in some intercolumniations. The other three arms of the quadriporticus were without roofs and only a few of their columns were still standing. The enclosing wall appears intact, with its principal access through a large arched doorway toward the western end of the northern wall. Two columns with what seem to have been projecting entablatures are depicted at the center of the outer face of the western wall. This evidence should be associated with that for a gatehouse found on the plans of the Anonymous of the Albertina and of Giovanni Colonna [2], although the discrepancies among the three sources is suggestive of the ruinous condition of the structure in the sixteenth century.

Turning to the church proper, Lafréry's view clearly shows the slight difference in the height of the nave and transept. The round-arched windows in the aisles must represent an abbreviated restoration, since other sources demonstrate that its fenestration at the time was a hotchpotch of blocked windows and newly interpolated openings of apparently more than one date. A curious tower-like structure, which is found in no plan of the church but is repeated time and again in copies of the Lafréry view, appears adossed to the northern flank of the nave. The artist exhibits some confusion as to the windows in the northern arm of the transept. The three square windows high in the western wall must represent the three oculi which appear in Alippi's elevation and in eighteenth century views. One of the original three oculi does appear in the northern wall along with three rectangular openings. These must be abbreviations of the actual number of openings existing at the time, some or all of which may have been blocked. An apparently semicircular structure is seen to abut the northern wall of the transept between the two deep buttresses. Although the latter are documented in almost every representation of that part of the building, the semicircular annex appears in no plan of S. Paolo.

In contrast to Lafréry's view and its derivatives, Maggi's *veduta* of 1600 shows the church and convent from the southwest and with far greater faithfulness (fig. 139). The different heights of the nave and transept roofs approximate the true proportion. Clerestory and aisle windows, still reduced in numbers, are in large part blocked, with smaller windows piercing the blocking; but in the aisle wall, the outlines of the original larger openings are clearly marked. Buttresses project west and south at right angles from the southwest corner of the transept. The western wall of the transept is barren of detail, which cannot have been the case. In the gable of the south wall of the transept one sees three rectangular openings whose frames suggest that they were installed in the sixteenth or early seventeenth century. Below them appears at least one large round-arched window, closed and with a smaller rectangular window inserted. This must be the easternmost of the transept windows described in Section E-1 [3]. The two buttresses at the southwestern corner of the transept, projecting south and west at right angles, appear in many other sources and, indeed, the southern buttress still exists to its full length and height. The corresponding buttress seen today at the southeastern corner of the transept, which likewise still existed in 1600, was buried in a tower-like structure subsequently demolished and for which the Maggi view is our only source. In the atrium, finally, the principal entrance is from the north, but it is shown more toward the center of the wall. The southern

[1] Pancirolo-Posterla-Ceccono, *Roma sacra e moderna*, Rome, 1725, 450; the engraving, inserted between pages 450 and 451, gives one such variant, showing the church from westsouthwest and with but one column rising in the atrium.

[2] Above, 132 ff.

[3] Above, 125 ff.

wall of the forecourt exhibits two interesting but inconclusive features: projections at the center of the wall, as though they may once have flanked an opening subsequently blocked; and round-arched windows, also blocked, that are visible at the eastern end of the wall. There is no detail rendered in the western wall of the forecourt where Lafréry saw two columns. The number of columns of the narthex arcade is three in excess of the actual number of nine, and they appear as colonnettes standing on a parapet broken only at the center. The mistakes appear to be the result of inexact notes made at the site in which the number of columns was confused and in which the parapets, later inserted between the originally free-standing columns as seen in Lafréry's view, were interpreted as medieval colonnettes standing on a common parapet. Of the columns in the other tracts of the quadriporticus only three, to the north, stood upright. The columns of the atrium, except in its west wing, thus seem to have disappeared progressively in the course of the sixteenth century: the draughtsman of the early Albertina plan (IT AZ 703), *ca.* 1510, apparently saw the quadriporticus wall preserved (fig. 122); Giovanni Colonna da Tivoli, 1554, saw clearly only the wings to the north, east and south, but had to reconstruct the west wing (fig. 123b); in 1575, at Lafréry's time, columns still rose, west, north and south, though few in number (fig. 138); while by 1600, only three, in the north, were left. By 1749 the last remains of the atrium, including the east tract heretofore intact, had given way to the new narthex of Benedict XIII and its plain forecourt. But still in 1749 Piranesi's view of the façade, with its new narthex seen in definite foreshortening, shows in the foreground what purports to be, and perhaps is, a fragment of the original south wall of the atrium (fig. 86) [1]. Shortly before, Alexander Cozens gave an impression in sober outlines of the relation of the basilica to the Tiberside embankment, although the distance appears to be too short (fig. 92).

Interior views begin to appear in the eighteenth century with an etching of Piranesi's and a group of paintings by or attributed to Piranesi. In Piranesi's fine etching of the interior (fig. 91) the nave and aisles are shown facing east south east: the columns are all fluted, but, contrary to fact, all have Corinthian capitals of the same type; the soffits of the arcade are decorated with tendril patterns in variations, whether in stucco or mosaic; the spandrels are filled with foliage designs. On the upper walls, one sees the frieze of papal medallion portraits, set off by cornices above and below; higher up, the murals are in two tiers; finally, the clerestory zone remains bare. The articulation of the mural zone shows two orders of colonnettes, twisted clockwise below, counterclockwise above, and supporting tendril and foliage friezes respectively. The wall surmounting the arcade between the aisles is bare, as are the soffits of the arches; the brick voussoirs are clearly marked down to their swallow-tailing at the springing. The wall of the outer aisles is pierced by rectangular windows, widely spaced [2].

Pannini's views in Moscow (fig. 140) and Cambridge, England [3], are far less dramatic; but they show with greater precision the stucco tendrils in the soffits and on the spandrels of the nave arcades; most of the clerestory windows are blocked, as indeed they were; and, in the lower tier of murals, fluted rather than twisted half colonnettes or pilasters appear, as they are also shown by Alippi and Uggeri. Pannini's painting in Moscow and the Cambridge sketch thus are

[1] See also Missini and Pucci, *La Roma di Giovan Battista Piranesi*, 1970, 94, where the authors identify the stretch of wall as that of the atrium from the end of the fourth century. However, in the etching the wall lies in shadow too deep to recognize the character of the masonry.

[2] A painted *veduta*, formerly in the Lanćkoroński Collection and attributed to Piranesi, recalls Pannini's interior views but is inferior in quality. Since the Pannini paintings appear to be undated, no exterior criterion resolves the question as to which is earlier. But the glazing of the openings in the wall surmounting the aisle arcades, as shown in the Lanćkoroński *veduta* is a feature so unlikely, as to make one suspect that painting of being a copy after Piranesi's etching; cut off at the north arcade of the nave, the copy omits the north aisles shown by Piranesi.

[3] Fitzwilliam Museum, no 1194. See Arisi, *Gian Paolo Pannini*, Piacenza, 1961, nos. 152, 214, where a number of apparently similar views are listed.

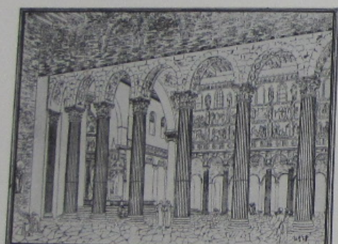
more dependable than Piranesi's etching. Still, that etching remains the best source from which to envisage the spatial character and the colour values of the church in the last years of its existence [1].

Detailed views of the interior before 1823 are rare. Of special importance is a pen drawing in the Lanciani collection of the Istituto di Storia dell'Arte e Archeologia in Palazzo Venezia by an anonymous hand, of the eastern end of the nave, the triumphal arch and a portion of the transept, as seen from the northern side aisle of the nave (fig. 141). It is the principal source documenting Nicolai's assertion that the spandrels of the nave arcade were of travertine. The voussoirs and the travertine stone work of the spandrels, which were covered by stucco decoration on the sides facing the main nave, are clearly seen from the side aisle. The six columns in the foreground are those identified by Nicolai as having fluted shafts of "Hymettean" marble (*marmo salino*) and late antique capitals. Like Uggeri's elevation drawing of the south wall (fig. 130), our drawing also shows a proper pilaster, though flatter than Uggeri's, and a capital respond on the eastern pier of the nave arcade. Whether the capital is to be identified with one of the two pilaster capitals of earlier imperial date described in Section E - IIa is impossible to determine [2]. Behind the nave colonnade one sees the triumphal arch and its Ionic columns, their impost cornices surmounted by blocks from which springs the arch, as shown in Uggeri's engraving of these capitals (fig. 134). Two of the five windows visible in the southern clerestory



(Moscow, Pushkin Museum)

140. S. Paolo f. l. m. Pannini, view of nave from west toward transept, *ca.* 1750.



(Palazzo Venezia, Racc. Lanciani)

141. S. Paolo f. l. m. Anonymous, view from north aisle toward south nave wall and transept, *ca.* 1810.

[1] Two views, taken diagonally across the aisles and nave, one by Joseph Woods *ca.* 1800, the other by Granet, *ca.* 1820, contribute nothing to our knowledge of the basilica. As it is, Piranesi's *veduta* is the best source.

[2] Above, 119.





142a, b. S. Paolo f. l. m. Acquaroni, (a) view of nave and north aisle, facing northwest, aquatint, 1823; and (b) detail.

are filled by transennae with round holes, as known from Uggeri's elevation. It is tempting to see in these survivors the gypsum transennae which the *Liber Pontificalis* attributes to Leo III.

A special category of *vedute* of S. Paolo includes the numerous drawings and prints made for an eager public immediately after the fire of 1823. Those by Luigi Rossini are the best known (figs. 82, 83). No contemporary achieves a comparable dramatic effect. However the work of Antonio Acquaroni appears to be the more detailed and therefore the more dependable (figs. 142a, b). A view of his of the ruined nave is particularly instructive. The first two columns of the northern nave arcade were still standing, and he faithfully recorded the difference in the design of their capitals, illustrating that the first column, as designated on Alippi's plan, was of the "Hymettean" (*marmo salino*) type with a late antique Composite capital with smooth leaves (*Vollblattkapitell*). The second capital, on the other hand, is of elaborate Corinthian type. One also clearly sees the cutting back of the spandrels over the abacuses of the capitals as described by Nicolai. The etching, too, shows the cut-stone nature of the nave arcade spandrel and the stone stringcourse above it at the point where the nave wall had collapsed toward the east end of the north colonnade (fig. 142b). He, like Rossini, also shows a distinct change in

the character of the masonry at the top of the transept wall. Since the brick frames of the oculi extend into this zone, the repair with which this change in masonry should be associated must have taken place before the oculi were closed. In the aisle arcade, one sees: the smooth leaved capitals, all Corinthian it seems; the sharply marked voussoirs of the arches; and, very clearly, the brick masonry of the surmounting wall with its openings high up. Finally, a painting by Léopold Robert in Copenhagen presents the ruin from the northwest, showing clearly the Corinthian capitals of the two first nave columns and the smooth leaved capitals, both Composite and Corinthian in the arcade separating the two south aisles (fig. 143).

Acquaroni's and Rossini's views of the nave (figs. 142a, b; 82, 83), etchings as well as the preparatory sketch for the view of the nave from the west, give an especially good rendering of the pattern of destruction in the southern arcade and show in some instances where the stone voussoirs of the arcade have fallen out of the arches. One of Rossini's etchings of the ruined nave seen from the transept (fig. 144) also shows the fissure between the original triumphal arch and the lining placed beneath by Leo the Great.



(Copenhagen, Thorvaldsen Museum)

143. S. Paolo f. l. m. Robert, view of nave and north aisle facing northwest, 1823.



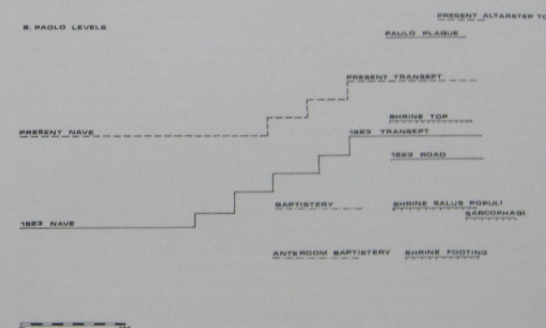
Antichità Romane)

144. S. Paolo f. l. m. Rossini, view from transept, showing triumphal arch and nave from east, 1823.

F. RECONSTRUCTION

1. The Shrine

The evidence of the shrine's appearance, as gathered from Vespignani's records, is deficient. Only some main elements seem to be clear. The monument, the *tropaion* in contemporary terminology, was approached from the *diverticulum*, some $4^1/_2$ m. west. Its façade is known from Vespignani's sketchbook, fols. 1^r and 15^r (figs. 94, 96). Its exterior ground level corresponded, we propose, with the bottom line of the SALVS POPVLI corner block and the continuing stone course (fig. 145). This socle course was supported by a footing zone, presumably under ground, its corner strengthened by stone quoins. While the height of the SALVS POPVLI block, 29 cm., is known, that of the footing zone can only be estimated from Vespignani's sketches and notes: the sarcophagi E, F, G, H, I and M stood 1.69 m. below the PAVLO plaques; since at least the sarcophagus E was placed in all likelihood against the socle course, the



(drawing: A. Frazer, M. Marolda)

145. S. Paolo f. l. m. Levels.

footing zone, starting 2.17 m. below the PAVLO plaques, must have been 0.48 m. high. If the three-line mark, sketched by Vespignani on fol. 15 of his sketchbook (fig. 96), represents the terminating cornice, the total height of the façade visible from the bottom of the socle course to the cornice was not more than 1 m. Inside, of course, the structure could have been quite a bit higher if its floor was sunk below the outside ground level. The corners of the structure were marked by pilasters; these, to judge by Vespignani's drawing, were roughly 20 cm. wide and, given the total height, they would have been stumpy, their shafts at best 60 cm. high. Capitals, placed above them, could have been *ca.* 10 cm. high. The proportions are low but correspond to those customary for corner pilasters on large sarcophagi. Roughly 0.60 cm. from the corner and only 40 - 50 cm. from the outer ground level, to judge by the height

of the stone course surmounting the socle course in Vespignani's drawing, the grilled opening occupied, it seems, most of the width of the façade. Being 0.36 m. high and at least 1.56 m. wide — but perhaps wider — it ended 22 cm. below the terminating cornice. Its low position above outer ground level strengthens the suspicion that inside the level of the monument was further down than outside. The width of the monument, counting the length of the grill and its distances from the corners, we calculate to have been at least 2.80 m. total, roughly twice its height — a kind of walled sarcophagus. The masonry, from ground level to the grilled opening, consisted of stone blocks, possibly re-used. Whether they continued higher up remains unknown, but it is certainly possible. Our reconstruction of the façade thus coincides with Kirschbaum's [1].

The grilled opening, apparently an integral part of the original construction, leaves little doubt as to the function of the monument as a shrine. The faithful would have approached it and peered through the opening at the *locus venerationis* inside, whether grave or memoria.

If the reconstruction of the façade presents no major difficulties, the monument itself remains problematic. The only element which might permit us to envisage it is the reticulate wall with brick quoins recorded on fol. 15 of Vespignani's sketchbook below his drawing of the façade and marked *fianco* with a line recording the position of the PAVLO plaques higher up. The level of the wall in relation to the plaques and its exact position are not recorded. However, fol. 1r and 3r of Vespignani's sketchbook (figs. 94, 95) and fol. 42 of the Lanciani scrapbook (fig. 97) show that he saw only the west and north sides around the High Altar excavated. Hence, the reticulate wall must have faced north. Also, the area excavated north of the altar was apparently small, witness fol. 3r of the sketchbook, perhaps 12 *palmi*, 2.65 m., from west to east. Finally, as we have pointed out [2], the brick quoins of the reticulate wall — its northwest corner — cannot have bonded with the stonework of the façade, and it is possible that it belonged to a mausoleum backing up against the shrine of the Apostle and thus hiding its east wall [3]. But this is hard to accept, since at one time (when enclosed in the pre-Theodosian "*basilica*" which faced the Via Ostiensis) the shrine was approached from the east. We thus propose a second alternative. The reticulate wall was the north wall of the original small mausoleum where the remains of Saint Paul were deposited; Vespignani when marking it simply *fianco* certainly thought so. This early shrine was later enlarged by demolishing its west wall and adding a westward extension, possibly shallow, and provided with an ashlar façade with pilasters flanking the grill of a long opening. Facing the *diverticulum* this façade would have attracted the attention of the passerby and allowed the faithful to offer their prayers in at least visible contact with the venerated relic of Saint Paul.

2. The pre-Theodosian Church

The letter of the three emperors of 384 mentions in passing the existence on the site of a basilica turning its back to the *diverticulum*, the "*iter vetus*", and to be replaced by their own huge church [4]. It is but natural to link this reference to the discovery in 1850 of the remains of an apse — its springing to the north seen already in 1838 — rising west of the shrine and facing east, its outside curve almost touching the *diverticulum* (figs. 100a, b). Belloni in

[1] Kirschbaum, *Gräber*, 177 f.
[2] Above, 116.
[3] This is the opinion of Kirschbaum, *Gräber*, 178.
[4] Above, 97 f., dig. 384.

surveying the remains presented the reconstructed plan of the church which he believed to have been terminated by this apse: a basilica, its nave enveloped on three sides by aisles, extending to the Via Ostiensis, but entered sideways from the north through the eastward transverse aisle (fig. 99) [1]. His imagination was apparently kindled by the plan of the seventh century church of S. Agnese fuori le mura. Except for the apse remains, not a scrap of evidence supports this reconstruction; the threshold of a door, reported to have been found in 1834 at an unknown depth below the northern springing of the late fourth century apse, may as well have belonged to a mausoleum in the necropolis covering the entire site. Of the pre-Theodosian church only this is known: it was a full-sized church, that is, the apse did not stand by itself; it sheltered the shrine of the Apostle; it faced east towards, and was presumably entered from, the Via Ostiensis, thus reversing the former approach to the shrine from the west; the terminating apse was 7.58 m. wide and 3.79 m. deep; and the shrine projected far into it so as to leave but little space on either side for the faithful to pass through and approach the grill in its façade. As to the body of the church, it can only be stated that it must have been quite sizable. Given the dimensions of the apse, the nave could not have been less than 8.50 m. wide [2]. Whether it was a simple hall or flanked by aisles — even a trefoil plan has been suggested [3] — remains open; the term *basilica*, used in the letter of 384, has functional meaning and refers alike to meeting halls and churches, small or large, with a simple nave, or a nave and aisles or a trefoil plan. If the building at S. Paolo was longitudinal, as seems likely, it would have been presumably one and a half times or twice as long as it was wide, that is, 12 to 17 meters. In the latter case, its façade would have coincided with the position of the chord of the later Theodosian apse, some 25 m. from the edge of the old Via Ostiensis and a plaza might have extended from the highway to the church.

3. The Theodosian Church

The plan of the church as projected in 384 was determined by two factors: the intention of the founders to build a church as large as possible, thus competing with Constantine's basilica at St. Peter's; and the topographical conditions and limitations of the site — the location of the shrine, the need to bring it as close as possible to the faithful, the position of the Via Ostiensis, the old *diverticulum* to be suppressed and the close vicinity of the Tiber.

The sources for envisaging the Theodosian basilica are so rich that this section is less an exposition than a commentary. The measurements as given by the various sources have been compiled and tabulated on the following pages, and reduced to Roman feet. It will be found that the figures given in Nicolai's text in *palmi*, those provided by Letarouilly in meters and those given by Giovanni Colonna in feet coincide, while Panvinio's measurements are far off the mark.

[1] Belloni, *Sulla grandezza e disposizione della Basilica Ostiense...*, Rome, 1853, pl. I.
[2] Kirschbaum, *Gräber*, 179, erroneously interpreted Belloni's section of the apse as having the setback inside rather than outside and thus reconstructed a nave at least 9.15 m. wide.
[3] C. Cecchelli in *Roma Nobilis*, ed. C. Cecchelli, Rome, 1953, 858.

CONSPECTUS OF DIMENSIONS

	Anonymous Albertina	Colonna da Tivoli	Panvinio	Nicolai text	Letarouilly	Others	Accepted dimensions in m. & R. ft.	
							m.	R. ft.
I. PLAN:								
Total length				563 *palmi* (125.35 m.)	128.38 m.	240 *cubitus* (Parisi)	**128.38**	**434 1/3**
Length of nave	406 *palmi* (90.53 m.)	302 *piedi*	328 1/2 *piedi*	403 *palmi* (89.87 m.)	89.88 m.	386 *piedi* (Uggeri) 210 *passus* (Fra Mariano)	**89.87**	**303 1/3**
Total clear width of nave	289 *palmi* (64.44 m.)	218 *piedi*	238 *piedi*	292 *palmi*, 2 *oncie* (65.27 m.)	65.126 m.		**65.27**	**220**
Width of main nave	108 *palmi* (clear?)	85 *piedi* center to center		107 *palmi*, 6 *oncie* 2'' (24.02 m.)	24.22 m. (clear) 25.34 m. (axial)		**24.22** **25.34**	**82** **85 2/3**
Depth of transept	108 *palmi*	81 3/4 *piedi*		108 *palmi*, 5 *oncie* (24.18 m.)	24.20 m.	43 *passus* (Fra Mariano)	**24.20**	**82**
Total width of transept	320 *palmi*	243 *piedi* (incrementally)		318 *palmi*, 5 *oncie* 3'' (71.09 m.)	71.018 m.	70.85 m. (Fontana) 100 *passus* (Fra Mariano)	**71.01**	**240**
Width of apse		81 *piedi*		111 *palmi*, 6 *oncie* (24.86 m.)	24.22 m.		**24.22**	**82**
Depth of apse					12.44 m. calculated[1]		**12.44**	**42**
Radius of apse				55 *palmi*, 9 *oncie* (12.43 m.)			**12.43**	**42**
Nave intercolumniations						11 *piedi* (Parisi)	**3.25**	**11**
Width of inner aisles	40 *palmi* (clear)	34 1/2 *piedi* center to center		40 *palmi*, 2 *oncie* clear (8.96 m.)	10.31 m. center to center	46 *palmi* (Alippi[2] plan - center to center) 34 *piedi* (Parisi)	**8.96** clear **10.31** center to center	**30** clear **35** center to center

[1] [Total length — (length of nave + thickness of triumphal arch + depth of transept)] = [128.38 m. — (89.88 + 1.86 + 24.20) m.] = 128.38 m. — 115.94 m. = 12.44 m.

[2] All measurements taken from Alippi's plans, section and elevations in Nicolai have been scaled.

CONSPECTUS OF DIMENSIONS

	Anonymous Albertina	Colonna da Tivoli	Panvinio	Nicolai text	Letarouilly	Others	Accepted dimensions in m. & R. ft.	
							m.	R. ft.
Width of outer aisles	39 *palmi* clear	32 *piedi* center to center		39 *palmi*, 10 *oncie* clear (8.88 m.)	9.85 m. center to center	43 *palmi* (Alippi - center to center)	**8.88** clear **9.85** center to center	**30** clear **33 1/3** center to center
Span of triumphal arch		67 *piedi* (original arch clear)			17.08 m. center to center of columns	75 *palmi* (Uggeri - clear) 65 *palmi* (Uggeri - center to center of columns)	**17.08** **19.60** (clear, scaled)	**57 1/2** (Leo arch) **67** (original arch clear)
Thickness of transept west wall					1.86 m.	8 1/2 *palmi* (Alippi)	**1.86**	**6 1/4**
Thickness of aisle wall	10 (?) *palmi*				1.89 m.		**1.89**	**6 1/2**
Thickness of nave wall		5 *piedi*			1.10 m.		**1.10**	**3 3/4**
Thickness of wall above aisle colonnade					0.94 m.	5 1/2 *palmi* lower 5 *palmi* after rafters (Alippi)	**0.94**	**3 1/3**
Foundation wall of nave						8 *palmi* (1.78 m.) (Fea)	**1.78**	**6**
Foundation of aisle arcades						5 *palmi* (1.12 m.) (Fea)	**1.12**	**4**
ATRIUM:								
Width		226 *piedi* (by computation!)	345 *piedi*	299 *palmi* * (66.80 m.)			**66.80**	**226**
Length				265 *palmi* (59.08 m.)			**59.08**	**200**

* Nicolai measured the baroque forecourt.

CONSPECTUS OF DIMENSIONS

	Anonymous Albertina	Colonna da Tivoli	Panvinio	Nicolai text	Letarouilly	Others	Accepted dimensions in m. & R. ft. m.	R. ft.
Width of lateral porticoes	*32 palmi*			*32 palmi* (7.14 m.)			**7.14**	**24 1/2**
Depth of narthex	*41 palmi*	*31 1/2 piedi*	*34 piedi*				**9.14**	**31 1/2**
Width of narthex		*226 piedi*					**66.81**	**226**
Width of open court		*166 piedi*					**48.96**	**166**
Depth of open court		*193 piedi* center to center					**57.07**	**193**
II. ELEVATION:								
Height of nave				*137 palmi, 8 oncie, 2 1/2 ''* (30.77 m.)		*137 palmi* to beams (Alippi)	**30.77**	**104**
Height of apse						*104 palmi* (Alippi)	**23.23**	**78 2/3**
Height of clerestory window sill						*105+palmi* (Alippi)	**23.42**	**80**
Height of clerestory windows						*22 palmi* (Alippi)	**4.91**	**16 1/2**
Width of clerestory windows						*11 palmi* (Alippi)	**2.45**	**8 1/4**
Distances between clerestory windows						*8 palmi* (Alippi)	**1.78**	**6**
Width of aisle windows		*4 piedi*					**1.18**	**4**
Distances of aisle windows		*3 piedi*					**0.89**	**3**

CONSPECTUS OF DIMENSIONS

	Anonymous Albertina	Colonna da Tivoli	Panvinio	Nicolai text	Letarouilly	Others	Accepted dimensions in m. & R. ft. m.	R. ft.
Height of nave columns				*ca.* 46 *palmi* base and capitals (10.26 m.)	10.44 m. base and capitals	47 2/3 *palmi* (Alippi)	**10.44**	**35 1/2**
Diameter of nave columns (*pavonazzetto*)				*4 palmi, 11 oncie, 2 1/2 ''* *5 palmi 1 oncia, 2 1/2 ''* (1.11-1.15 m.)	1.11-1.15 m.		**1.11 - 1.15**	**4**
Diameter of nave columns (*Hymettean*)				5 *palmi* 2 *oncie* (1.15 m.)			**1.15**	**4**
Height of inner aisle				*72 palmi, 9 oncie* (16.22 m.)			**16.22**	**55**
Height of outer aisle				*52 palmi, 3 oncie* (11.65 m.)			**11.65**	**40**
Height of triumphal arch columns				*59 palmi, 6 oncie, 1 1/2 ''* (13.27 m.)			**13.28**	**45**
Diameter of columns of triumphal arch				*6 palmi, 7 oncie, 1 1/2 ''* (1.47 m.)	1.474 m.		**1.47**	**5**
Height of aisle columns				*38 palmi* (8.47 m.)	8.47 m.		**8.47**	**29**
Diameter of aisle columns					0.94 m.		**0.94**	**3 1/4**
Height of openings of arcades						*10 1/2 palmi* (Alippi)	**2.34**	**8**
Height of transept				*120 palmi, 3 oncie* (26.81 m.)			**26.81**	**91**
Height of triumphal arch						*103 palmi* (Alippi)	**22.96**	**78**

a) THE PLAN

The plan of the church, as built from 384 on, remained unchanged until 1823. Characterized by a five-aisled nave preceded by an atrium and terminated by an undivided transverse hall, it closely resembles that of St. Peter's. At S. Paolo, however, the rectangular exedrae that terminated the short ends of the transept in the earlier church were omitted, the transept was deeper, almost as high as the nave and continuous in height, and the apse somewhat larger. We shall revert to the differences between the two basilicas and their possible causes at a later point[1].

The schematic plan underlying the Theodosian basilica of S. Paolo was in its conception comparable to that of St. Peter's. It differs, however, in its fundamental ideal modulus, which at St. Peter's was 30 and at S. Paolo 40 R. ft. This appears to have been the ideal radius of the apse, while the actual radius, 42 R. ft., is two feet in excess. The diameter of the apse, ideally 80, actually 82 R. ft., is equal to the depth of the transept, to the width of the central nave and to the height of the triumphal arch prior to the insertion of its lining under Leo I. The transept is three times as long as its width, actually and ideally 240 R. ft., or six times the modulus, while the length of the nave, actually $303^{1}/_{3}$ R. ft., appears to be three and three-quarters its width or seven and one-half times the ideal modulus. The distance from the inner faces of the nave columns to the inner faces of the outer walls is 73 R. ft. All these distances are measured in the clear. In the course of construction adjustments and slight deviations occurred in the projected dimensions, e. g. the width of the apse is slightly greater than the norm, the length of the transept slightly less.

Some of the discrepancies between the ideal and actual dimensions disappear when distances are measured in the foundations rather than at ground level, as we did at S. Giovanni in Laterano[2]. The thickness of some of the foundations walls at S. Paolo and their proportionate measurements in relation to the elements they carry above ground are known. The foundation walls of the aisle arcades were 5 *palmi* (1.12 m. or $3^{3}/_{4}$ R. ft.) thick, the arcade walls 0.94 m. or $3^{1}/_{4}$ R. ft. thick and 16.22 m. or 55 R. ft. high. The foundation walls of the nave, we assume, on both north and south were 8 *palmi* (1.78 m. or 6 R. ft.) thick; the upper walls, resting on arcades and of comparatively light bearing load, were only 1.10 m. or $3^{3}/_{4}$ R. ft. thick and 30.77 m. or 104 R. ft. high. The proportions correspond closely to those found in the Constantinian basilica at the Lateran: nave foundations 1.70 m., nave walls 1.10 m. Also at S. Paolo, proportionately to the nave walls north and south, the much more massive and equally high transept walls, with a thickness of 1.86 m. or $6^{1}/_{4}$ R. ft. would have rested on foundation walls *ca.* 11 R. ft. or 3.16 m. thick. We presume the same to apply proportionately to the façade wall and its foundation: the former being 6 *palmi* (1.34 m. or $4^{1}/_{2}$ R. ft.) thick, the latter *ca.* 2.70 m., 9 R. ft. thick.

Taking into consideration the width of the foundation walls and their projections beyond the rising walls which they carry, we presume the clear length of the nave, from the façade foundation to that of the transept, to have been exactly 300 R. ft, rather than the $303^{1}/_{3}$ R. ft. measured above ground. Including the thickness of the façade foundation wall, the length would have been 309 R. ft. To the east, no foundation wall seems to have run below the triumphal arch; but it is reasonable to assume that the builders added there the thickness of the transept foundation, 11 R. ft. Thus they arrived at a length of 320 R. ft., eight times the modulus.

[1] Below, 179 ff.
[2] Above, 74 f.

Adding to that distance the depth of the transept in the foundations, 80 R. ft., they obtained a total of 400 R. ft. These 400 R. ft. we consider to have been a basic measure and a starting point in laying out the plan. The builders would have obtained the clear width of the nave in the foundations, 80 R. ft. as against 82 R. ft. above ground, by taking one modulus, 40 R. ft., either side of this center-line. Correspondingly the width of the apse in the foundations would have been established at 80 R. ft., as against 82 R. ft. above ground.

We refrain from pressing our case further: the distance from the inner edges of the nave wall foundations to the outer edges of the foundations carrying the aisle walls, 98 *palmi* according to Nicolai and Fea, corresponds to 21.87 m. or 74 R. ft. and thus remains outside the pattern of a 40 R. ft. modulus and its multiples. Other systems of measurement may well have been coupled with that main pattern. In fact, the distance from the inner faces of the outer walls to the center lines of the main nave arcades is $68^{1}/_{2}$ R. ft., which approximates to 67 R. ft., the original clear opening of the triumphal arch, which on Uggeri's survey (fig. 133) scales 90 *palmi*, 68 R. ft.

The plan developed on the basis of a modulus of 40 R. ft. was further conditioned, at least in the nave, by a desire to approximate not only the arrangement of St. Peter's but its magnitude as well. Thus the actual clear length of St. Peter's nave was 307 R. ft. and that of S. Paolo was $303^{1}/_{3}$ R. ft.; the width of St. Peter's nave was 225 R. ft. clear and that of S. Paolo was 220 R. ft.

b) ELEVATIONS

(i) *The nave*

The measurements of the superstructure of the nave demonstrate that its elevation was as carefully laid out in a succession of simple dimensions as was the plan. The vertical dimensions of the side aisles were largely determined by conditions established in the central nave and the requirement of covering each pair of side aisles under a common roof that would rise to just below the sills of the nave's clerestory windows.

It would appear that the critical design dimension in the vertical plane was not the slightly more than 104 R. ft. from the pavement to the seating of the roof trusses but the 100 R. ft. to the top of the mosaic and pictorial decoration and, presumably, the bottom of an original coffered ceiling. The result is a spatial volume 300 by 80 by 100 R. ft., essentially the space one sees in the present basilica. Before the repairs of Leo the Great, the central nave opened at its eastern end in a large and simple arch, 67 R. ft. wide and 82 R. ft. high. The former dimension recalls that of the combined widths of a pair of the aisles, and the latter is equal to the width of the nave. The lateral walls were supported on an arcade borne by two rows of twenty columns, each $35^{1}/_{2}$ R. ft. high. The sills of the clerestory windows were set at a height of 80 R. ft. above the paving, nearly on line with the apex of the triumphal arch. They were 35 R. ft. above the apices of the nave arcades. A projecting moulding was set at 45 R. ft. above the paving to separate the arcade from the clerestory walls above.

The nave arcades presented a structural feature remarkable among the Early Christian basilicas of Rome. They were constructed of travertine *opus quadratum* up to and including the projecting mouldings. This is documented by Nicolai's statement, by an anonymous early nineteenth century drawing that shows the northern outer face of the north arcade (fig. 141), by a detail on Acquaroni's etching of the ruined church (fig. 142b) and, less faithfully, by an anonymous restoration drawing (fig. 131). The evidence suggests that the stone was employed

structurally. The stone structure, moreover, was cut back in a quirk, virtually invisible from the ground, in order to remove the load from the fragile diagonal volutes of the capitals, as described by Nicolai.

Of the forty columns supporting the clerestory of the nave, twenty-four had white marble Corinthian capitals — the preserved remnants of which appear to be of Severan date —, white marble bases of the Roman Attic type and fluted *pavonazzetto* shafts, renowned for their beauty in the eighteenth and early nineteenth centuries. The remaining sixteen columns had white marble bases, fluted shafts variously described as of *salino* or "Hymettean" marble and late antique Corinthian capitals[1]. The latter type appeared on the first columns on either side of the western portal. The following eleven columns in the northern arcade and thirteen columns in the southern arcade were of the former type. The latter type reappeared in the final eight columns to the north and six columns to the south. The uneven distribution of the two types of columns in the arcades has given rise to the hypothesis that they represent two building periods: the *pavonazzetto* columns coming from the original construction and the "Hymettean" columns with late antique capitals representing a restoration by Leo the Great, following severe damage caused by the earthquake of 442-443. Even if Leo's work at S. Paolo was occasioned by an earthquake and not, as the *Liber Pontificalis* states, by fire set by a bolt of lightning, it seems unlikely that the two ends of the arcades would have collapsed and have left the less stable central portion standing. The forty Corinthian and Composite capitals of the two side aisle arcades, like the capitals in the main arcades over the shafts of "Hymettean" marble, were of late antique manufacture and were presumably made for the basilica. The large and small capitals, although of different formats, exhibit similar features of style and were therefore apparently coeval. It has never been suggested that Leo the Great rebuilt the two aisle arcades. Thus, there are only two possibilities for explaining the two types of columns in the main nave arcades. Either the *pavonazzetto* columns represent Leo's restoration of a nave that had been previously characterized by homogeneous, contemporary columns, not only in the side aisles but in the main nave as well; or else the damage to the basilica in the fifth century was not as great as some have assumed and the two column types, irregularly disposed, represent the original state of the nave. There is no absolute proof for either hypothesis, but the former is the more likely for the following reasons. The building was sufficiently damaged in the first half of the fifth century to require the lining of the triumphal arch. Deichmann and Tschira have interpreted the repairs to the aisle column capitals and bases by means of metal clamps as evidence of fractures probably associated with the earthquake[2]. And despite the prevalence of spoils in colonnades of fourth and fifth century churches in Rome, greater care was usually taken in their arrangement in pairs or groups on either side of the nave than is evident in S. Paolo f. l. m.

Accepting the hypothesis of Leo the Great's introduction of the *pavonazetto* columns into the basilica, one is presented with a remarkably homogeneous view of the colonnades of the original structure — one at odds with the heterogenous character of the colonnades of the Vatican basilica. Such a uniformity of the forty nave and forty aisle columns, both in material and design, was paralleled in the nave's fenestration which both in the clerestory and in the outer walls was composed of a large, round-arched window in each intercolumniation, double the number of windows found in St. Peter's.

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[1] The composite smooth leaf capital shown by Acquaroni (fig. 142a) on the first column on the left-hand remains to be explained.
[2] Deichmann-Tschira, 106.

(ii) *The transept*

The earliest accurate drawings of the basilica's longitudinal section show the transept paving ultimately to have stood some 90 cm. above the level of the nave (fig. 145). According to the drawings of Alippi and Nicolai, the plinths of the Ionic columns installed under Leo the Great to support the lining of the triumphal arch rested on a level *ca.* 36 cm., or two steps, above that of the nave (pl. IV). Since the excavations for the nineteenth century open *confessio* west of the High Altar failed to produce any trace of a tie wall running between the two piers of the triumphal arch, such as existed at St. Peter's, it was necessary for Leo's builders to construct new foundations for the columns. Therefore, the level of the base of the columns was not fixed by any pre-existing structural condition, but only by the spring line of the triumphal arch and the lengths of the reused colossal column shafts.

There are three possible relationships between the levels of the nave and the transept in the building's early history. The pavements may have been uniform in height and the new columns may have stood on blocks or pedestals 36 cm. high in order to accommodate the spoils in their new setting. At a considerably later date, perhaps during the reign of Gregory the Great or even that of Leo III, whose repaving of the transept is recorded in the *Liber Pontificalis*, the level was raised the full 90 cm. at which it appears in the graphic sources. Or the original building may have included a transept some 36 cm. above the nave, and the foundations and bases of Leo I's columns were adjusted so as to set the latter at the transept level. And last, Pope Leo I may have raised the transept paving *ca.* 36 cm. at the time he had the great columns and the lining arch installed as part of a larger restoration of the basilica. In the absence of objective evidence to support one of the three hypotheses beyond the others, we favour the first on the principle of efficiency and in the absence of comparable changes of level in the original states of other Early Christian basilicas in Rome.

The plausibility of the nave's and transept's originally having been on the same level is supported by a further consideration. The inside height of the transept is given by Nicolai as 120 *palmi* 3 *oncie*, that is 26.86 m. or almost 91 R. ft., 26.89 m. Alippi's plates show this to have been the distance from the pavement to the sixteenth century coffered ceiling. To arrive at the roof trusses, *ca.* 8 *palmi*, 6 R. ft., must be added, making 97 R. ft. The intended distance may well have been 100 R. ft. and this total is reached when the transept pavement is lowered to the nave level, 0.90 m. down.

While nave and transept floors thus were presumably level, the walls of the transept, its roof trusses and possibly a coffered ceiling were lower than those in the nave, whose height was 104 R. ft. Indeed, Alippi's sections as well as any number of exterior views show this difference of four feet in the height of nave and transept respectively[1]. We cannot see any functional or structural reason for this divergence; but we might point out, as has been done previously[2], that the transept of St. Peter's, too, was lower than its nave, although much more so than that at S. Paolo[3].

Further elements to be mentioned at S. Paolo are the buttresses that project from the western and eastern corners of both the northern and southern ends of the transept. Those to the north are known only from the numerous *vedute* and from Alippi's surveys, where they scale at 60 *palmi* long and 16 *palmi* wide, 13.38 m. or 45 R. ft. and 3.57 m. or 12 R. ft. respectively. The buttresses projecting south from the south arm of the transept survive. They were

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[1] Christern and Thiersch, "Der Aufriss von Alt-St.-Peter, 2. Teil", *R. Q. Schr.*, 64 (1969), 1 ff., esp. 23.
[2] Christern, "Der Aufriss von Alt-St.-Peter", *R. Q. Schr.*, 62 (1967), 133 ff.; Christern-Thiersch, as above, 1 ff.
[3] Below, 251 ff.

apparently narrower, only 9 R. ft., and shorter; we estimated the western buttress at roughly 10 m. long and Alippi's plan confirms this guess, showing a length of 45 *palmi*, 10.35 m. or 35 R. ft. Certainly, this western buttress was an integral part of the original construction and this is likely to hold as well of the second buttress to the south and the buttresses to the north. A fifth buttress shown by Alippi projecting from the west wall of the south transept in line with the outer aisle wall was obviously added later, as witness its position cutting across one of the oculi in the transept wall.

A final word needs to be said about the fenestration of the transept. The three windows surviving on the south wall are counterparts of those shown on the north wall in Ciampini's and Seroux d'Agincourt's exterior elevations (figs. 129, 87). Only their widths and distances from each other are known, 4.53 m., 15 R. ft., and 3.12 - 3.30, m., 10$^{1}/_{2}$ - 11 R. ft. respectively. The upper parts of the windows have disappeared. But obviously they were round-arched like those in the nave. Given the dimensions of these, 11 *palmi* wide and 22 *palmi* high, 2.45 m. by 4.90 m. or 8 by 16$^{2}/_{3}$ R. ft., the transept windows would have been proportionately 9.06 m., 30 R. ft., high. *Vedute* as well as Alippi's plates and Ciampini's and Seroux d'Agincourt's elevations show an oculus surmounting each of the three round-arched windows in the north arm of the transept (figs. 87, 97, 129). Likewise, oculi opened in the west wall of each transept arm while two or possibly three oculi were placed in the east wall of each arm. All oculi were surmounted by voussoirs but were lacking corresponding brick rings around the lower halves, and all were pushed close up to the eaves line of the roof. Were they, then, possibly built as an afterthought during construction, as were presumably those on the south clerestory wall of SS. Giovanni e Paolo[1]?

Alippi's transverse section of the nave shows in the west wall of each transept arm two huge arches with double voussoirs; inside the arch on either side of the nave and closest to it a smaller arch appears. Vertical lines are marked dropping from the springing of each arch and the first impression leads one to interpret arches and vertical lines as arches and jambs of blocked windows. However, the 'jambs' are cut across by the aisle roofs. Rather than being huge windows, then, the arches and 'jambs' formed a system of relieving arcades set into the wall during construction. Their existence, in any event, seems to be confirmed by the *veduta* of Lafréry, who interpreted them as windows (fig. 138).

(iii) *The apse*

The apse seems to have risen originally level with the transept. Its wall, according to Alippi's longitudinal section, was 12 *palmi*, 9 R. ft. thick. The fourth century masonry of the apse is preserved on the outside to at least 7.80 m. from the pavement of the transept and thus *ca.* 8.50 m. from the present and 8.70 m. from the Theodosian nave level (fig. 113). There is no reason to doubt that the original brickwork does not rise to the full height of the outer apse wall, 78 *palmi*, 17.39 m. or 59 R. ft., from transept level, according to Alippi; or else, if the thinner top wall of the apse is included, 103 *palmi*, 22.97 m., from that level and thus nearly 23.69 m., 80 R. ft. from original nave level. The half-dome of the apse, too, may well be the original one. Carrying the thirteenth century mosaic of Honorius III, it springs *ca.* 12.90 m. from transept level, or 13.80 m., 47$^{1}/_{2}$ R. ft., from original nave level. Its apex, scaled from Alippi, reached a height of 109 *palmi*, 24.31 m., above the transept floor and *ca.* 25.21 m. or 85 R. ft., above the original nave floor. No trace of windows was seen along the apse curve, 7.80 m. from transept level and thus at more than half the height to the springing of the apse dome. Hence the apse seems to have been windowless.

[1] Above, *Corpus* I, 299.

(iv) *The atrium*

An atrium must have formed a part of the late fourth century building, as Leo the Great is credited with the restoration of the fountain within it[1]. That it had yet to reach its definitive form is suggested by the attribution in the *Liber Pontificalis* to Symmachus of the construction of steps "*ante fores basilicae...in atrium et cantharum*"[2]. Symmachus' concern for the forecourt of S. Paolo parallels his interest in that of St. Peter's. As at the Vatican basilica, we take "*grados ante fores basilicae*" to designate steps from the open court to the narthex of the church[3], and "*grados...in cantharum*" perhaps to signify steps up to the fountain. The atrium at S. Paolo does not recur in sources until the eighth century, when Hadrian, finding it in desolate condition, paved it in marble[4]. As with Symmachus', Hadrian's work in the atrium of S. Paolo is paralleled at St. Peter's[5]. It is unlikely that it had gone unpaved since the fourth century; probably the action of time and the periodic flooding of the Tiber made Hadrian's work necessary.

If the collapse of the campanile in the earthquake of 1349 damaged the porticoes of the atrium, there is no record of their repair[6]. Indeed, the forecourt must have shared in the general state of disrepair characteristic of the basilica in the fifteenth century[7]. And Lafréry's view of 1575 (fig. 138) shows this still to have been the case in the sixteenth century. Subsequent views document a progressive decay of the church's walled forecourt, until Benedict XIII apparently pulled down the vestiges of the atrium, including the narthex of the basilica and the few surviving columns of the quadriporticus. He enclosed the space in front of the basilica with new walls in which he built a monumental baroque gate on the north side, thereby recognizing what for centuries had been the normal means of approaching the church.

Although by the sixteenth century much of the atrium had collapsed and its *cantharus*, still recorded in the late fifteenth century, was no longer to be seen, sufficient evidence remained, as variously recorded and interpreted by the author of the Albertina plan and by Giovanni Colonna, to support a reasonably complete restoration. The Albertina drawing represents a square courtyard surrounded by a decastyle quadriporticus, the eastern limb of which, i.e. the narthex of the church, was 41 *palmi* deep, and whose northern limb — and presumably the remaining two as well — was 32 *palmi* deep. The size of the courtyard is not recorded, nor are the dimensions of the propylon with three portals which projects westward.

Colonna's plan represents a less complete atrium but with greater dimensional detail. The rectangular open space is deceptive as it was truncated by the author to fit all on his sheet. The nine columns of the narthex arcade are corrected by a note, "*vono esser 10 steli*", and the ten columns are shown in light lines in the southern porticus beneath the seven drawn in ink, as in the Albertina plan. Colonna's dimensions for the depth of the narthex and the lateral porticoes coincide with those of the Albertina plan. The clear width of the open court shown by Colonna, computed from his dimensions in the narthex, is 166 R. ft. This presents an apparent problem in that the weight of evidence supports the reconstruction of a square atrium and its depth, as recorded by Colonna, was 193 R. ft. It is suggested that he was confused by

[1] Above, 98 f., dig. 440-461, at the end.
[2] Above, 99, dig. 498-514.
[3] Below, 173 f., dig. 498-514, and 265 f.
[4] Above, 100, dig. 774-795.
[5] Below, 267.
[6] Above, 101, dig. 1349-50.
[7] Above, 101, dig. 1425.

the anomalous state of the ruined atrium at the west, and that the 193 R. ft. in fact represent an open court 166 R. ft. in depth as in width, plus a colonnade and a portico of 27 R. ft., which agrees with the evidence elsewhere in the drawing and that of the Albertina Anonymous. It is impossible on the strength of these two sources to determine the precise relation of the projecting propylon to the quadriporticus — whether it merely protruded from the western wall or whether it extended more deeply into the quadriporticus to interrupt the western portico, as did the gatehouse at St. Peter's. In the light of the dependence of the church proper on the example of St. Peter's, it is tempting to assume a similar relationship between the forecourts of the two basilicas. Although such an assumption may be supported by Colonna's plan, the latter is not conclusive evidence. That two columns projected from the western wall is illustrated in the views of Lafréry (1575) and Laurus (1612), although not in the manner shown either in the Albertina plan or that of Giovanni Colonna.

On balance it can be said that S. Paolo had acquired, early in its history, a square quadriporticus. Sixteenth century and later views are uniform in showing its narthex to have been arcaded, as were presumably the other three limbs. The columns were full-sized, as shown by Lafréry, Laurus and Vercelli and not medieval dwarf columns set on a parapet, as shown by Maggi. At one time the atrium was entered by a gatehouse at the center of the western façade; but details remain unclear. By the end of the Middle Ages, however, the gatehouse as well as the northern, western and southern porticoes of the atrium had collapsed, leaving only a perimeter wall standing. At that time, the habitual entrance was through a gate in the northern wall.

G. CHRONOLOGY

1. THE SHRINE

Saint Paul's death, presumably in 67 A.D., reasonably well attested to, provides a firm *terminus post*; for the existence of the shrine the reference made by the presbyter Gaius about 200 A.D. to the *tropaion* on the Ostian Way is a sufficiently credible *terminus ante*[1]. A third, circumstantial *terminus ante* is provided by the apparent transfer in 258 of the relics of Saints Peter and Paul, or parts thereof (or possibly their festival) to the *memoria apostolorum* on the Via Appia, excavated below the present church of S. Sebastiano[2]. The archaeological evidence for the shrine of Saint Paul, as recorded by Vespignani and presented by us[3], suggests a date between 90 and 140 A.D. for the reticulate wall facing north; its technique of construction with brick quoins characterizes buildings from Trajan to Hadrian[4]. Assuming this to have belonged to a mausoleum east of and independent from the shrine with its stone-built façade — this being one alternative — the shrine could be, though it was presumably not much, earlier or later than the reticulate structure. On the other hand, accepting the second, and to us more likely, alternative of the reticulate tomb's being the original shrine, later expanded and provided with the façade seen by Vespignani, the dating rests on firmer ground: the very end of the first or the first third of the second century for the original core. This would have received, a genera-

[1] Kirschbaum, *Gräber*, 181, dated the construction of the shrine's façade under Constantine. This seems impossible to us if the pre-Theodosian apse, as he assumed, was Constantinian: the façade of the shrine facing the inside of the apse wall at a short distance would hardly have been visible.

[2] Above, *Corpus* IV, 102, 144.

[3] Above, 112 ff.

[4] Lugli, *La tecnica edilizia romana*, Rome, 1957, 523 ff.

tion or so after his death, the remains of Saint Paul or, indeed, may have been built over his grave. The westward extension of the early shrine and its masonry façade cannot be dated on archaeological grounds. They may antedate the removal of the relic to the Via Appia in 258 A.D.; and they may even precede the statement of Gaius in 200 A.D. A date in the later second century, while unproven, is plausible[1]. More or less contemporary with the early shrine of Saint Peter in the *muro rosso*, the *tropaion* of Saint Paul in that later phase would have been monumentalized and its interior, while inaccessible, made visible to the faithful, who would offer prayers and material gifts through the large grill.

2. THE PRE-THEODOSIAN CHURCH

The remains of an apse, first seen in 1823 by Vespignani (fig. 97) and more fully excavated by Belloni in 1850, and the church which it must have terminated, provided access to the shrine from the Via Ostiensis rather than the *diverticulum*[2]. This has been linked as a rule to the alleged foundation by Constantine of a basilica on the site[3]. Occasionally a pre-Constantinian date has been proposed, but the arguments supporting that thesis are weak[4]. As pointed out previously, however, the evidence favouring the foundation of a basilica dedicated to Saint Paul by Constantine, the *Liber Pontificalis* passage being the only source, is equally shaky: a variant reading assigns the foundation to Constantine's sons, Constantine II and Constantius, and thus to the years 337 - 340[5]. The re-transfer of the Apostles from the Via Appia to the Vatican Hill and the Via Ostiensis respectively, as recorded in 354, at a date unspecified but obviously prior to the mid-fourth century, may be recalled in this context[6]. It would be natural to build a church for the relics upon return to their original resting place. However, the only firm evidence available for dating the apse and the church, which it terminated, leads to the year 384 as a *terminus ante*; it is documented by the reference in the rescript of the three emperors of that year to a basilica on the site of their church, and by the position of the remains of the apse recorded by Belloni below the level of their church. We consider a date late in Constantine's reign or shortly after as plausible: the single authentic donation recorded in the *Liber Pontificalis*, near Tarsus, could have been made only after 324; and the variant reading of that passage places the donation even after Constantine's death. Under the circumstances, we deem it best to refer to that building simply as pre-Theodosian.

3. THE BASILICA OF THE THREE EMPERORS

The construction of the large basilica as it essentially survived until 1823 (and still survives in remains more extensive than expected) is well documented. Founded in 384 — or possibly in 386 — by the three ruling emperors, Theodosius I, Valentinian II and Arcadius[7], it was apparently started without much delay. By 402 - 403, witness both Prudentius' poem[8] and the

[1] Above, 148.

[2] Above, 117 f., fig. 99.

[3] Styger, *Märtyrergrüfte*, 73; Lietzmann, *Petrus und Paulus*, 315; Kirschbaum, *Gräber*, 179.

[4] Erbes, "Das Alter der Gräber...", *Ztschr. f. Kirchengeschichte*, 7 (1885), 43, 53 ff.; Belvederi, "L'Origine...", *RAC* 22 (1946), 103 ff.

[5] Above, 97, dig. 314-335 (or 337-340?).

[6] Kirschbaum, *Gräber*, 153 f.

[7] Above, 97 f., dig. Spring 384 (or 386?).

[8] Above, 98, dig. 393-402/3.

dedicatory inscription, copied on the triumphal arch [1], both the construction and at least part of the decoration had been completed under the auspices of Honorius, emperor of the West from 395 on, the *princeps bonus* in Prudentius' poem [2]. The inscriptions of Pope Siricius and the *vir clarissimus* Filippus on the easternmost column of the northern aisle arcade, dedicating that column (...COLVMNA PAVL...) — nothing more — and dated November 17, 390 [3], may suggest completion of the transept and beginning of construction on the nave [4]. It would be, after all, imperative to finish as fast as possible the apse and the transept, the latter sheltering the shrine. Building the nave and aisles need not have taken many years either, given both the resources at the disposal of the imperial patrons and the comparative simplicity of plan and construction. By 402-403, the structure was completed and the coffered ceilings and beams in the transept, in the nave and presumably in the aisles were in place and gilded [5]. Parts of a mosaic decoration, too, were completed; but it remains a moot point whether the floral mosaic Prudentius saw on the curved arches, "*tum camiros hyalo insigni varie cucurrit arcus sic prata vernis floribus renident*" [6], refers to the nave arcades [7]; it had better be referred to the arch of the apse and the triumphal arch [8], the latter presumably bearing the original dedicatory inscription of Honorius, later copied on the rebuilt triumphal arch of Leo I [9]. If this was the case, only the transept and the east end of the nave had been fully decorated by the first years of the fifth century, and it remains open whether or not the decoration of the nave aisles was ever completed — or, for that matter, started.

4. REPAIRS

a) *Leo I*

The most incisive repair which the basilica of the three emperors underwent prior to 1823 took place under Pope Leo I. Whether caused by lightning, as the *Liber Pontificalis* reports, or by an earthquake in 442-443 [10], the center part of the nave walls collapsed and the triumphal arch was weakened early in the pontificate of Leo I. The archaeological evidence for both damage and repair have been described [11] and Leo's dedicatory inscription stresses the character of his measures as primarily a rescue operation: the fabric was strengthened and the roof renewed [12]. Structural repairs were apparently quickly completed, "*celeri tecta reformat ope*" [13]. Also, the mosaic on the rebuilt triumphal arch was at least begun and its inscription composed while the donor, Galla Placidia, was still alive and thus prior to 450. Possibly, though, just as after the catastrophe of 1823, the transept and triumphal arch were rebuilt and decorated first; perhaps the shrine too, was then crowned with the inscription, placed vertically, of which the two plaques PAVLO and APOSTOLO MART. are preserved; the missing part

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[1] Above, 98, dig. 393-402/3.
[2] PRUDENTIUS, *op. cit.*, line 47; KUENZLE, *op. cit.*, 357, thinks of Theodosius rather than Honorius; DEICHMANN-TSCHIRA, 98, 110.
[3] Above, 98, dig. 390.
[4] DEICHMANN-TSCHIRA, 110.
[5] PRUDENTIUS, *op. cit.*, lines 49 ff., also above, 98, dig. 393-402/3.
[6] PRUDENTIUS, *op. cit.*, lines 53 f.
[7] KUENZLE, *op. cit.*, 356; RUYSSCHAERT, *op. cit.*, 277.
[8] MARTINEZ Y FAZIO, "Un discutido testimonio...", *Archivum Historiae Pontificiae*, 2 (1964), 45 ff.
[9] Above, 98 f., digs. 393-402/3 and 440-461.
[10] *Ibid.*, 440-461.
[11] Above, 138 f., 157.
[12] Above, 98, dig. 440-461.
[13] *Ibid.*

would have given the name of the donor, PAVLO APOSTOLO MART. being a dedicatory dative, in which case a third plaque would have read LEO EPISCOPVS, or an abbreviation thereof. Construction on the nave may well have continued after 450. Still, when Leo died in 461, the basilica was apparently fully restored. The decoration (or redecoration) of the nave, with frescoes and stucco work, may have continued until and even after his death. It was perhaps only then that the elogium of the presbyter Felix and the deacon Adeodatus, both active in the restoration (as architects, artists, or supervisors?) was added — in a different hand — on Leo's dedicatory tablet [1]. The tenor of the reference to their work, "*decus omne tectis ut rediret*", raises even the suspicion that they were concerned primarily with the decoration. But this is sheer conjecture.

b) *Gregory I*

The work of Pope Symmachus (498 - 514), including repairs to the apse and the installation behind it of a baptistery, can no longer be identified. The first clearly identifiable extensive structural remodelling inside the basilica, after Leo's work of repair, concerned the transept, the shrine, the altar and its ambient. In a major campaign, the level of the transept was raised 90 cm. over that of the nave and aisles, with five steps navigating the difference in height. The shrine as a result was buried. Only its top emerged 10 cm. from the pavement of the transept and carried the two remaining inscription plaques PAVLO and APOSTOLO MART., placed horizontally rather than vertically. It was apparently also then that at least the big circular hole was drilled into the plaque, obviously to allow for the lowering of *brandea*; the two smaller square holes may be later [2]. A crypt, its shape unknown, was dug adjoining the rear of the buried shrine. Over the shrine rose the High Altar on a platform which was rectangular, apsed and raised a few steps above transept level; it served as a chancel, its apse reserved for the cathedra; the surrounding parapets carried marble columns, surmounted by wooden architraves. A passage in the biography of Gregory I in the *Liber Pontificalis* [3] reports that he arranged for the saying of Mass over the body of Saint Paul as well as Saint Peter; a letter of his furthermore tells of his having had excavations done near the tomb of Saint Paul, with an eye to certain improvements [4]. Both statements lead us to attribute the structural changes described to Gregory the Great. The arrangement coincides after all, with his overall policy of making accessible, but not too accessible, the bodies of the saints, having Mass celebrated right over their graves and assembling the clergy around the altar.

c) *Later Repairs*

Structural changes, datable to the Middle Ages, are few, except for the constantly needed replacement of roof beams and other repairs to the roof [5]. (The coffered ceilings, seen by Prudentius, had long disappeared. Were they renewed by Leo I? We do not know.) The decoration and the liturgical furnishings, on the other hand, were renovated and remodelled whenever funds were available [6]. Of building activities only a few stand out: the laying out of an anular

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[1] Above, 99, dig. 440-461.
[2] GRISAR, *Analecta*.
[3] *LP* I, 310; above, 99, dig. 590-604.
[4] Above, 99, *loc. cit.*
[5] Above, 100, dig. 687-701.
[6] Above, 100 f., digs. 715-741, 772-795, 795-816, 847-858.

crypt below the apse, we do not know when, but possibly in the ninth century when they were in high fashion[1]; the erection, also at an unknown date, perhaps in the eleventh century, of a campanile over the western bay of the outer north aisle[2]; and the construction, between 1130 and 1143, after a fire caused by lightning in 1115, of the arched diaphragm wall along the transverse axis of the transept designed to carry the beams of the roof[3], — known from Nicolai's description, Alippi's plates and the engravings showing the ruin in and after 1823. The basilica, then, must have been in reasonably good repair in the thirteenth century, when emphasis was laid on decoration. The apse mosaic dates from the first third of the thirteenth century[4]; the frescoes in the nave were repainted by Cavallini[5]; the baldacchino was built over the High Altar by Arnolfo di Cambio[6]; in the early fourteenth century the façade was remodelled with a terminating cavetto and window tracery, and decorated with a sumptuous mosaic[7]. By then, apparently, funds had run short: the campanile, which collapsed in 1349, was hastily restored; but the porticoes of the atrium, which had likewise collapsed, were apparently not repaired; and by the early fifteenth century, the church was in a lamentable condition[8].

Interest was revived for a short time in the late sixteenth and early seventeenth centuries. Under Sixtus V, the chancel of Gregory, no longer in keeping with contemporary liturgy, was removed and the crypts under the High Altar and in the apse were closed down; a coffered ceiling was built over the transept, hiding the open truss roof, unseemly and inconvenient over the altar, and rectangular windows replaced the original round-arched windows in the short end wall of the north transept, by then largely blocked like the surmounting oculi[9]. In the early decades of the seventeenth century, work remained concentrated on the transept and apse: chapels were built, flanking the apse; pairs of altars were set against the end walls; and a new High Altar was erected in the apse against the rich background of a screen wall. Only in the eighteenth century did attention turn once more to the nave; but work was limited to minor changes in the fenestration of the aisles and to replacing the damaged frescoes of the clerestory zone by a simple pilaster decoration.

[1] Above, 130.
[2] Above, 101, dig. 10th and 11th centuries.
[3] Above, 101, dig. 1115-43.
[4] Above, 101, dig. before 1218 - after 1227.
[5] Above, 102, dig. 1277-80.
[6] Above, 101, dig. 1285.
[7] Above, 101, dig. 1325.
[8] Above, 101 f., dig. 1349-50 and 1425.
[9] Above, 102, digs. 1585-1590, 1587.

S. PIETRO

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B. ANCIENT DESCRIPTIONS AND ILLUSTRATIONS

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II. Ancient Illustrations

a) Architectural Surveys

ca. 1470 — SIMONE DEL POLLAIUOLO (IL CRONACA), Cantharus in atrium, pen and wash; UA 157^{v} (BARTOLI, *Monumenti*, I, pl. XIV, fig. 30)[1].

late 1505 / early 1506 — BRAMANTE (?), Plan of Old St. Peter's with " Rossellino choir " and new projects, sanguine; UA 20 (GEYMÜLLER, pls. 9, 10, 11;METTERNICH, *Peterskirche*, pl. 11; our fig. 149).

1505—1512 (?) — JACOPO SANSOVINO (?), Measured plan of the mausolea off south flank, pen and wash; UA 4336 (BARTOLI, *op. cit.*, IV, pl. CCCLVII, fig. 626).

1506—1515 — FRA GIOCONDO (?), Column shaft, described: " *la grosseza de la colonna ma no*[n] *d*[e] *la testa schanelatta mezana i*[n] *S. pietro* ", measured, pen and ink; UA 125^{r} (BARTOLI, *op. cit.*, I, pl. XLIII, fig. 71, no. 1).

1506—1515 — FRA GIOCONDO (?), Three columns from nave and aisles, pen and ink, inscribed: one and three, " *la cholona mezana in san pietro* "; two, " *la cholona grossa in san pietro de la nave di mez ... fu 8 retta* "; they measure in height 26, 39.03 and 26.5 *palmi* respectively; UA 125^{v} (BARTOLI, *op. cit.*, I, pl. XLIV, fig. 72, nos. 1, 2, 3).

1506—1515 — FRA GIOCONDO (?), Two cornices, described: " *Questa . cornjce j la mixurai . a san pietro . una . parte l altra . parte apresso . a quella . chassa de . quel Romano . che tiene quella nuda delli cholgionj . de marmo chossa bellissima* ", pen and ink; UA 1539^{r} (BARTOLI, *op. cit.*, I, pl. XXXI, fig. 58, nos. 8, 9).

1506—1515 — FRA GIOCONDO (?), Panelled pilaster (end pier of one of nave colonnades?), described: " *questa cholonna . e quella di san pietro la qualle serve alla pariete de la nave grande...* ", and in another hand, " *In sa*[n] *pietro presso al volto santo* ", pen and ink; UA 1543^{v} (BARTOLI, *op. cit.*, I, pl. XLI, fig. 68).

1508—1515 (?) — BASTIANO DA SANGALLO, Attic base of nave column, described: " *delle base grande di s*[ant]*o pietro* ", measured, pen and ink; Uff. A 1746 (BARTOLI, *op. cit.*, IV, pl. CCCXLIII, fig. 581, no. 4).

ca. 1521 — B. PERUZZI, Bronze portal, measured survey, described: " *Porta de bronzo jnel porticale vechio di san pietro antiqua misurata...* ", pen over sanguine; Uff. A 111^{r} (BARTOLI, *op. cit.*, II, pl. CLXV, fig. 298).

ca. 1521 — B. PERUZZI, Surveys of column shafts. Twenty-two from north colonnade starting from façade (" *volto sc̄o* "), from one to twenty with materials and measurements (revised by Antonio da Sangallo the Younger), pen and ink; UA 108^{r} (BARTOLI, *op. cit.*, II, pl. CLXIII, fig. 295; our fig. 216). Twenty shafts from south colonnade, with materials and measurements (revised as

[1] We use UA for Uffizi, Dis. arch.

before; thirteen to fifteen marked by Antonio da Sangallo the Younger, 1524-1527, "*dallevare adeso sono in pie*"), pen and ink; UA 108v (*ibid.*, pl. CLXIV, fig. 296; our fig. 217). Last or penultimate shaft from north colonnade, described: "*colon*[n]*a di granito dal organo di Sa*[n] *Pietro interra cioè la longheza a...*", measured, pen and ink and black chalk; column with base, capital and entablature, "*colon*[na] *con capi*[tello] *e base*", measured, pen and ink; UA 120r (*ibid.*, pl. CLXV, fig. 297; our fig. 197); column "*i*[n] *santo pietro...colonne di sanc.o pietro ch*[e] *sono andate p*[er] *terra*", measured drawing of column shaft; measured outline of column with cable fluting "*S. Pietro in roma*" and measured corner of *tegurium*, pen and ink; UA 130r (our fig. 215).

ca. 1521 — ANONYMOUS, Thirty-four columns from aisles with measurements and materials, pen and ink; Vienna, Oesterreichische Nationalbibliothek (formerly Stadtbibliothek), Cod. 10935, f. 33r, possibly after lost Peruzzi drawing (CHRISTERN, I, pl. 18; our fig. 218).

1516—1552 (?) GIOV. BATT. DA SANGALLO, Ten column shafts from nave, described on verso: "*Cholonne antiche i*[n] *chiesa Di S*[an]*to pietro parte i*[n] *op*[er]*a e parte i*[n] *terra*", pen and ink; UA 1084 (BARTOLI, *op. cit.*, IV, pl. CCXL, fig. 574).

1516—1552 (?) GIOV. BATT. DA SANGALLO, Composite capital, described: "*Questo chapitello si e i*[n] *san pietro e sono e piu begli di roma di questa soria Lo disotto del chartocio viene a mezo lo chapitello a putto*", measured, pen and ink; UA 1804v (BARTOLI, *op. cit.*, IV pl. CCCXXXIII, fig. 560); cf. SANSOVINO (?) or ANTONIO DA SANGALLO THE YOUNGER (?), same capital plus profile of Attic base and shaft of fluted column, pen and ink; UA 32r (*ibid.*, III, pl. CCX, fig. 351); also, 1515-1516, ANONYMOUS, Composite nave capital, London, Soane Museum, Codex Coner, f. 151a (ASHBY, "Sixteenth-century drawings of Roman Buildings", *P.B.S.R.* 2 [1904], 72).

1516—1552 (?) GIOV. BATT. DA SANGALLO and workshop, Surveys of column shafts, all clean copies with materials and measurements. Twenty nave columns from north colonnade ("*al volto santo*"), pen and ink; UA 1079 (unpublished); cf. UA 1083 and 1084, both copies of 1079 (1083 reproduced, JONGKEES, pl. 13). Nine column shafts from the north and south aisles, pen and ink; UA 1080 (JONGKEES, pl. 15). Eleven shafts from north and south aisles, pen and ink; copy of UA 1851 which includes one more column; UA 1081, (unpublished). Eleven shafts from north and south aisles, pen and ink; UA 1082 (unpublished).

1524—1527 — B. PERUZZI, Sketched plan with measurements, east part of basilica and atrium and sketches of trusswork, pen and ink over preparatory sanguine sketches; UA 11r (BARTOLI, *op. cit.*, II, pl. CLXI, fig. 293; GRAF WOLFF METTERNICH, *op. cit.*, pl. 89; our fig. 194). Sketches of east part of nave and portico, with measurements, pen and ink over sanguine; UA 119r and v (unpublished).

1538 — ANTONIO DA SANGALLO THE YOUNGER or workshop, Measured elevation of *muro divisorio* and cross-section through old nave, pen and wash (our fig. 196); UA 121 (GIOVANNONI, *Antonio da Sangallo il Giovane*, Rome, 1959, 143, fig. 87; CHRISTERN, I, pl. 1).

1539—1540 — FRANCISCO D'OLLANDA, Colonna Santa, cantharus in atrium (TORMO, *Os desenhos... Francisco d'Ollanda*, Madrid, 1940, f. 26v and 5r, 120 and 47 ff.).

ca. 1560 — DOSIO, Two column bases, described: "*Δ e alla fabrica di sa*[n] *pietro...misurata...Laltra seg*[na]*ta Ω e pur a sa*[n] *pietro ed e la basa duna delle colonne di te*[m]*plu*[m] *pacis che vi fu portata a te*[m]*po che era architetto el sa*[n]*gallo...*", pen and ink; UA 2011v (BARTOLI, *op. cit.*, V, pl. CCCCLXXX, fig. 880, nos. 1, 2).

1555—1567 — S. PERUZZI, Column base and top surface of Corinthian capital "*In Sa'Pietro*", measured, pen and ink; UA 662r (BARTOLI, *op. cit.*, IV, pl. CCCLXXIX, fig. 662, no. 7).

late XVI century — CHERUBINO ALBERTI, Column with capital and entablature from nave and two bases from nave and aisle; Rome, Gabinetto Naz. delle Stampe, vol. 2502, f. 9r, (CHRISTERN-THIERSCH, II, pl. 1; our fig. 219).

1589—1590 — ALFARANO, Plan, based on survey of 1571, engraving; our fig. 195; Vatican Library (ALFARANO, pls. 1, 2).

b) VIEWS

ca. 440 — ANONYMOUS, Shrine of Saint Peter with vine scroll columns, Pola casket, ivory; Venice, Museo Archeologico (BUDDENSIEG, "Le Coffret... de Pola", *Cah. Arch.* 10 [1959], 157 ff.; our fig. 223).

11th century — ANONYMOUS, Façade during early middle ages, miniature; Windsor, Eton College, Ms. 124, (Codex Farfensis), f. 122a (ARMELLINI-CECCHELLI, *Chiese*, 894; our fig 199).

ca. 1465 — FOUQUET, Interior of nave facing west, Coronation of Charlemagne, miniature presumably derived from view done in Rome in 1443-1447; Paris, Bibl. Nat. Ms. fr. 6465, f. 89r, *Grandes Chroniques* (DURRIEU, *Mélanges G.B. de Rossi*, *Mél. Ec. Franç.* XII, [1892], Supplement, 221 ff.; our fig. 200).

ca. 1490 — PIERO DI COSIMO (attr. to), St. Peter's from the south, background of tondo showing Madonna adoring Child, oil; Toledo, Ohio, Museum, no. 37.1 (unpublished; our fig. 201).

1490—1495 — ANONYMOUS, Far distant view from Monte Mario of *Civitas Leonina*, Vatican Palace and St. Peter's, pen and ink; Escorial, ms. 28-II-12 (EGGER and others, *Codex Escurialensis*, *Sonderschriften des Oesterreichischen Archäologischen Instituts in Wien*, IV, Vienna, 1905-6, 63, ff. 7v-8).

ca. 1524 — GIULIO ROMANO and PENNI, View of interior, fresco; Vatican, Sala di Costantino (HARTT, *Giulio Romano*, New Haven, 1958, pl. 60; our fig. 221).

1532—1536 — HEEMSKERCK, New St. Peter's under construction, from northeast, showing old basilica, west end of nave colonnade and aisle wall, pen and ink; Berlin, Kupferstichkabinett, 79 D2, f. 13r (HÜLSEN-EGGER, *Heemskerck*, I, pl. 14; our fig. 205).

1532—1536 — HEEMSKERCK, Panoramic view of Old and New St. Peter's, from south, pen and ink; Berlin, Kupferstichkabinett, 79 D 2a, f. 51r (HÜLSEN-EGGER, *op. cit.*, II, pl. 67; our fig. 220).

1532—1536 — ANONYMOUS, New St. Peter's under construction, from south, showing end wall and corner of old south transept, pen and ink; Berlin, Kupferstichkabinett, 79 D 2a, f. 54r. (*Ibid.*, pl. 72; our fig. 208).

1532—1536 (?) HEEMSKERCK (?), New St. Peter's under construction, from east, showing nave, colonnades, and upper walls of old church, pen with brown wash; Berlin, Kupferstichkabinett, 79 D 2a, f. 52r (HÜLSEN-EGGER, *op. cit.*, pl. 69; our fig. 202).

1532—1536 — HEEMSKERCK, Piazza S. Pietro, atrium façade, gatehouse, and gable of Old St. Peter's, Vatican Palace and Loggia di Benedizione, pen and ink; Vienna, Albertina (formerly Hofbibliothek), architectural drawings (EGGER, *Veduten*, I, pl. 17; our fig. 213) [1].

after 1538 — ANONYMOUS, New St. Peter's under construction, from north, showing north transept of Old St. Peter's, Colonna Santa, remains of north aisles and east part of nave, pen and ink; Berlin, Kupferstichkabinett, 79 D 2, f. 15r (HÜLSEN-EGGER, *op. cit.*, I, pl. 16; our fig. 206).

1532—1536 — HEEMSKERCK (?), Interior of old and new transepts from north, pen and wash; Stockholm, Nat'l. Museum, Coll. Anckarsvärd 637 (KRAUTHEIMER, *Art Bull.* 31 [1949], 211 ff.; our fig. 204).

1554—1555 — ANONYMOUS, New St. Peter's under construction, from north, showing Bramante's enclosure, old apse and west wall transept, pen and wash; Berlin, Kupferstichkabinett, 79 D 2a, f. 60r (HÜLSEN-EGGER, *op. cit.*, II, pl. 82; ACKERMAN, *The Architecture of Michelangelo*, London, 1961, I, pl. 53a; II, p. 93).

ca. 1560 — NALDINI (?), Crossing of New St. Peter's, showing shrine enclosure and fragment of old west transept wall, described: "*questo e ritratto di sto pietro dalla porta della chiesa vecchia acan'o all'organo verso la testa della croce di bramante*", pen and wash; Hamburg, Kunsthalle 21311 (EGGER, *Veduten*, I, pl. 32; our fig. 203).

ca. 1560 — DOSIO, Obelisk and S. Andrea from east, pencil, pen and wash; UA 2536 (original) and 2535 (copy) (BARTOLI, *op. cit.*, V, pl. CCCCXLV, figs. 816, 817). Another views is UA 4345 (*Ibid.*, pl. CCCCXLVI, fig. 818).

before 1564 — DOSIO, New St. Peter's under construction, interior from south showing old apse and west wall of transept, pen and wash; UA 91 (EGGER, *Veduten*, I, pl. 31; our fig. 209).

1564 or after — ANONYMOUS, New St. Peter's under construction, from southeast, showing part of nave of old basilica, pen and ink; Frankfurt, Städel. Kunstinstitut, 814 (EGGER, *Veduten*, I, pl. 45).

1574—1575 [2] — DOSIO, Atrium and façade of Old St. Peter's, pen with brown wash; UA 2555 (lost; BARTOLI, *op. cit.*, V, pl. CCCCXLVI, fig. 819); used for his engraving 1575, published DE CAVALIERI, *Urbis Romae aedificiorum illustrium reliquiae* (EGGER, *Veduten*, Text I, 26; our fig. 211).

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[1] Similar views: EGGER, *Veduten* I, pl. 18, perhaps a copy, Collection Duke of Devonshire, Chatsworth; HÜLSEN-EGGER, *Heemskerck*, II, pl. 70, Copy after Heemskerck (?), view of Piazza S. Pietro and atrium façade, pen and wash, Berlin, Kupferstichkabinett 79 D2a, f. 53r; EGGER, *Veduten* I, pl. 20, Dutch artist, 1544-1545, Piazza and façade from southeast, Vatican Library (at present not traceable); *ibid.*, pl. 21, Anonymous, Atrium façade, Dresden, Kupferstichkabinett.

[2] The griffin plaques, removed in 1574, are already gone, providing the *terminus post*.

ca. 1605(?) TASSELLI[1], *Muro divisorio*, elevation from east, pen and watercolor; Vatican Library, Album Archivio San Pietro, f. 17 (CHRISTERN, I, fig. 4a); Copies by Grimaldi, Vatican Library, Barb. lat. 2733, ff. 115^{v}-116^{r} (GRIMALDI, *Descrizione*, figs. 56, 148, p. 151).

ca. 1605(?) TASSELLI, North wall of nave, pen and watercolor; Vatican Library, Album Archivio San Pietro, f. 13 (CHRISTERN, I, fig. 4b); copied by Grimaldi, Vatican Library, Barb. lat. 2733, ff. 108^{v}-109^{r} (GRIMALDI, *Descrizione*, fig. 52, pp. 142 f., 143).

ca. 1605(?) TASSELLI, Nave, sectioned view up to *muro divisorio*, pen and watercolor; Vatican Library, Album Archivio San Pietro, f. 12 (CHRISTERN, I, fig. 5b; our fig. 198); copied by Grimaldi, Vatican Library, Barb. lat. 2733, ff. 104^{v}-105^{r}, reproduced GRIMALDI, *Descrizione*, fig. 51, pp. 138 f., 139; 17th-century fresco in the new Grotto of St. Peter's; copy of the grotto fresco, Cod. Vat. 4410, f. 24.

ca. 1605(?) TASSELLI, Atrium and façade of Old St. Peter's, pen and watercolor; Vatican Library, Album Archivio San Pietro, f. 10 (CHRISTERN, I, pl. 5a; our fig. 212); copied by Grimaldi, Vatican Library, Barb. lat. 2733, ff. 133^{v}-134^{r} (GRIMALDI, *op. cit.*, fig. 63, p. 164 f.; our fig. 214); 17th-century fresco in the new Grotto of St. Peter's;copy of the grotto fresco, Cod. Vat. 4410, f. 28.

1620[2] GRIMALDI, Elevation of interior face of east façade, pen and watercolor; Vatican Library, Barb. lat. 2733, ff. 120^{v}-121^{r} (GRIMALDI, *op. cit.*, fig. 59, p. 156 f.).

1620 GRIMALDI, Elevation of the south wall of nave to the *muro divisorio*, pen and watercolor; Vatican Library, Barb. lat. 2733, ff. 113^{v}-114^{r} (GRIMALDI, *op. cit.*, fig. 55, p. 148 f.).

1620 GRIMALDI, Oratory of John VII, pen and watercolor; Vatican Library, Barb. lat. 2733, ff. 94^{v}-95^{r} (GRIMALDI, *op. cit.*, fig. 42, pp. 126-7); cf. Oratory of John VII, Album Archivio San Pietro, f. 31 (WAETZOLDT, *Kopien*, fig. 477).

1620 GRIMALDI, S. Maria in Turri, façade, pen and watercolor; Vatican Library, Barb. lat. 2733, ff. 152^{v}-153^{r} (GRIMALDI, *op. cit.*, fig. 78, pp. 188-9); cf. S. Maria in Turri, Archivio San Pietro, H. 2, f. 62^{r} (WAETZOLDT, *Kopien*, fig. 463).

We omit a number of views, interior and exterior, which either idealize the building or else are more or less reliable versions of representations on our list, such as: 1504-07, PINTURICCHIO, Interior, Siena, Duomo, Libreria Piccolomini (CARLI, *Il Pinturicchio*, Milan, 1960, pl. 135); 1546, VASARI, View from south, Rome, Palazzo della Cancelleria, Sala dei cento giorni (EGGER, *Veduten*, *I*, 31); 1573, VASARI, Gatehouse façade, Vatican, Sala Regia (VENTURI, *Storia dell'arte italiana*, IX, Milano, 1933, pt. 6, fig. 217), and sketch, Louvre, Cabinet des dessins (EGGER, *Veduten*, I, 21); 1585, ANONYMOUS, Piazza and façade, Vatican Library fresco (VON PASTOR, *Sisto V*, Rome, 1922, pl. XI); 1586, ANONYMOUS, New St. Peter's under construction, sacristy, Vatican Library fresco (*ibid.*, pl. XII).

C. DATES

64 Saint Peter suffers martyrdom and is buried on the Vatican hill, "*via Aurelia, in templum Apollinis,...iuxta palatium Neronianum, in Vaticanum...*", to quote wording and legendary topographical elaborations of the *Liber Pontificalis*, compiled in its early parts about the sixth century (*LP*, I, 118). Following late tradition a number of his early successors were buried near him, "*...iuxta corpus beati Petri in Vaticano...*" (*LP*, I, 121 f., 126, 128 f., 131 f., 136 f.).

ca. 200 The presbyter Caius, as quoted in Eusebius' *Ecclesiastical History* (303-324), points polemically to the *tropaia* in Rome of Saints Peter and Paul on the Vatican and the Ostian Road respectively, "...ἐπὶ τὸν βατικανὸν ἢ ἐπὶ τὴν ὁδὸν τὴν Ὠστίαν..." (EUSEBIUS, *Ecclesiastical History*, II, xxv, 7, ed. Loeb Classical Library, I, 182).

[1] The first and last sheets of this group of drawings in the Album, ff. 9^{v}-10^{r} and f. 34^{v} are signed by Tasselli, and there seems no reason to question his authorship of the intervening drawings. The accompanying notes are Grimaldi's autograph as stated f. 9^{r} and f. 34^{r}.

[2] All Grimaldi drawings are based on studies done from 1608-1619.

317—318 Coin, found inside sarcophagus in mausoleum of Trebellena Flacilla (*Esplorazioni*, 148, mausoleum T) below south transept, proves intactness of cemetery at that time (GUARDUCCI, *Rendic. Pont. Accad.* 39 [1966-67], 135 ff.; BRUUN, *The Roman Imperial Coinage*, VII, London, 1966, 249, no. 149 f.).

319 An inscription of late (?) fourteenth century date, marking in the old basilica the alleged site of the division by Pope Sylvester of the bones of Saints Peter and Paul, dates that legendary event 319 at the time this church was founded — "CCCXIX. QN FCA FV I ECCA". (KIRSCHBAUM, *Gräber*, pl. 36 b). While the story of the division and its twelfth century origin have been fully discussed (KIRSCHBAUM, "Die Reliquien der Apostelfürsten und ihre Teilung", *Xenia Piana* [*Miscellanea Historiae Pontificiae*, 10] Rome, [1943], 51 ff., and *idem*, *Gräber*, 213 ff. and 248 f., notes), no light has been shed so far on the date 319 assigned by the inscription to the construction of St. Peter's or on its source.

319—322 An inscription, now in the ex-Lateran Museum and possibly of fourth century date, is generally interpreted as referring to an interruption of twenty-eight years in the annual sacrifices offered to the Great Mother in the Phrygianum sanctuary (MARUCCHI, "Di alcuni monumenti...dai Musei Pontifici", *Diss. Pont. Accad.* ser. 2, XV [1922], 271 ff.), presumably located near the south end of Maderno's façade of New St. Peter's and thus south of the atrium of the old church. Concomitantly a gap occurs between 319 and 350 in a series of dedicatory inscriptions (*C.I.L.* VI, 1, 497-504, 508, 512; VI, *Additamenta*, 30780) referring to these sacrifices and found, though not *in situ*, mostly in the excavation for Maderno's façade (GRIMALDI, Vat. lat. 6438, fols. 43^{v} ff., and *Descrizione*, 309 ff., cc. 270 ff.), others in the Borgo and as far as Castel S. Angelo (*ibid.*, 500 f., c. 488^{v}; also *Not. Sc.* 1922, 81 ff. and *Esplorazioni*, I, 15). Hence a date shortly before 350 is suggested as ending this interruption. The break in services has been linked to the disturbance caused by the construction of Old St. Peter's nearby, and a beginning date between 319 and 322 for work on the church has been proposed (JOSI, *Rendic. Pont. Accad.* 25-26 [1949-51], 4; GUARDUCCI, *Cristo e San Pietro*, 65 ff.).

319—324 Constantine, in the pontificate of Sylvester I, 314-336, builds a basilica for Saint Peter, "*...fecit basilicam beato Petro...*", supposedly enclosing his tomb with bronze plaques (?), "*...cuius loculum...ex aere cypro conclusit...*"; above he sets up porphyry pilasters and vine scroll columns brought from Greece "*...exornavit supra...columnis purphyreticis et alias columnas vitineas quas de Grecias perduxit...*", causes the apse vault to be covered with gold foil, "*...cameram basilicae ex trimma auri...*", and provides for the church a precious gilded silver altar, a number of altar vessels, though few if compared with the Lateran, and lighting fixtures of gold and silver for the nave, but none in front of the altar, and for the north aisle (only this?) "*...coronam auream ante corpus...cum delfinos L qui pens. lib. XXXV...fara argentea in gremio basilicae XXXII...ad dexteram basilicae fara argentea XXX...altarem ex argento auroclusum cum gemmis...numero CCC, pens. lib. CCCL...*" (*LP*, I, 176 f.).

Autumn 324 or after Constantine endows S. Peter's with rich land holdings, all in the Eastern provinces, "*...per diocesem Orientis...*", hence not in his gift before the defeat of Licinius, September 18-20, 324 (*LP*, I, 177 ff.).

after autumn 324 *a*) Inscription, mutilated, on arch of apse "*in arcu absidae super altare ... literae quae non certius habitae maiore ex parte corruerunt...*", read about 1450 by Maffeo Vegio and presumably referring to war with Licinius, 324: "...CONSTANTINI...EXPIATA...HOSTILI INCURSIONE..." (VEGIO, *AA.SS. Junii*, VII, 62; copied GRIMALDI, *Descrizione*, 203, c. 164^{v}; DE ROSSI, *Inscriptiones*, II, 1, 345; DE ROSSI-SILVAGNI, *Inscriptiones*, I, 4095).

b) Inscription, until 1506, though barely legible, on triumphal arch, "*In arcu Sci Petri*" (DE ROSSI, *op. cit*, II, 1, 20; DE ROSSI-SILVAGNI, *op. cit.*, 4092; "*...in arcu maiori et triumphali... Quorum characteres longe vetusti...Constantini tempus...arguere videntur...*" (VEGIO, *loc. cit.*); accompanied by representation in mosaic of Constantine, presenting model of church to Christ and Saint Peter: "*in ecclesia sancti Petri in frontispitio maioris arcus...Constantinus in musivo depictus literis aureis ostendens Salvatori et Beato Petro ecclesiam ipsam...sancti Petri...*", visible until demolition of arch for construction of New St. Peter's (JACOBACCI, *De Concilio Tractatus*, Rome, 1538, 783, as quoted by FROTHINGHAM, "Une mosaique constan-

tinienne inconnue à St.-Pierre de Rome", *Rev. Arch.* ser. 3, I, 1 [1883], 68 ff.): "QUOD DUCE TE MUNDUS SURREXIT IN ASTRA TRIUMPHANS HANC CONSTANTINUS VICTOR TIBI CONDIDIT AULAM" (see also DIEHL, *ILCV*, 1752; LIETZMANN, *Petrus und Paulus*, 189 f.; JONGKEES, 39 f.). The date of the figural composition remains questionable.

c) Inscription, within the apse, "*In absida Sci Petri*", transmitted by the Sylloge Einsiedlensis and frequently copied, may but need not be contemporary: "IUSTITIAE SEDIS FIDEI DOMUS AULA PUDORIS HAEC EST QUAM CERNIS PIETAS QUAM POSSIDET OMNIS QUAE PATRIS ET FILI VIRTUTIBUS INCLYTA GAUDET AUCTOREMQUE SUUM GENITORIS LAUDIBUS AEQUAT" (DE ROSSI, *op. cit.*, II, 1, 21, 55, 156; DE ROSSI-SILVAGNI, *op. cit.*, 4094; DIEHL, *ILCV*, 1753; LIETZMANN, *loc. cit.*; JONGKEES, 31). Against the interpretation, formerly generally accepted, of the *pater* and *filius* being Constantine and Constantius II and the consequent dating of the building's completion after 337, RUYSSCHAERT, *Rendic. Pont. Accad.* 40, (1967-68), 171 ff., has proposed — convincingly to us — a reference to the persons of the Trinity. Hence, while a late date is still possible, there is no need to date the inscription after 337.

After 324 and before end 329 Constantine places a heavy gold cross, inscribed by himself and his mother Helena (d. late 329; BRUUN, *The Roman Imperial Coinage*, VII, London, 1966, 72 f.) as donors of the church, "*...crucem ex auro purissimo lib. CL in mensurae locus ubi scriptum...*CONSTANTINUS AUGUSTUS ET HELENA AUGUSTA HANC DOMUM REGALEM SIMILI FULGORE CORRUSCANS AULA CIRCUMDAT... *ex letteris nigellis*" (*LP*, I, 176; DE ROSSI-SILVAGNI, *op. cit.*, 4093).

333 An Imperial rescript, March 28, 349, addressed to Limenius, *praefectus praetorio* (and consul that year), decrees punishment for removing from monuments any columns, marble or other materials in cases postdating 333 (*Cod. Theod.* IX, 17,2; *Theodosiani Libri XVI*, ed. MOMMSEN, I, 2, Berlin, 1904, 464). The rescript stands within a series of decrees extending from 340 to 386 and all concerned with penalties for the crimes of removing for private use materials from graves and mausolea or of burial within the city limits. The implied exemption from punishment for such *violatio* prior to 333 has been linked to the demolition of mausolea inherent in the construction of St. Peter's (SESTON, *Cah. Arch.* 2, 1947, 153 ff.), unconvincingly in our opinion. Even if related, though, the date 333 would logically refer, not to the beginning of work (SESTON, *loc. cit.*; KIRSCHBAUM, *Gräber*, 152) but to its termination.

317—337 and after 337 Several bronze coins of Constantine and of his sons, Constantius and Constantine II, came to light in tearing down the walls of the east parts of the old church in 1608, "*...in murorum demolitione...complures nummi aenei cusi tum Constantini, tum Constantii augustorum tum Constantini nobilissimi Caesaris*" (GRIMALDI, *Descrizione*, 243, c. 208v). The coins of Constantine I and Constantine II, still as *Caesar*, not further identified by Grimaldi, may date from any time between 317 and 337. Those of Constantius — Grimaldi uses the plural "*in his qui Constantii sunt*" — bore the legends, on the averse, "D. N. CONSTANTIUS P. F. AUG.", on the reverse, "FEL. TEMP. REPARATIO"[1]. The *Augustus* title would seem to date them after September 337. However, it must remain in doubt whether the coins were found *in situ* within the masonry or at the foot of the walls or, indeed, in tombs nearby. On the other hand, a number of brickstamps, found when the apse was demolished in 1592 and bearing Constantine's name, were definitely *in situ*, "*...dum...absidem...caementarii demolirentur, inventos...in structura parietum quamplurimos quadratos lateres...duorum mensura palmorum...habentes in medio signum...Constantini...ut vides expressum...*" (BARONIO, *Annales Ecclesiastici*, III, Rome, 1594, last [unnumbered] page of index). These give as a *terminus ante* at least a date prior to 337.

352—366 Pope Liberius said to be in possession of St. Peter's, then obviously completed (*LP*, I, 208).

366—385 Damasus installs a baptistery at or near St. Peter's; inscription, "NON HAEC HUMANIS OPIBUS...", once "*ad fontes*" (DE ROSSI, *op. cit.*, I, 417; DE ROSSI-SILVAGNI, *op. cit.*, 4096; FERRUA, *Epigrammata Damasiana*, 93 f.), supported presumably by a fragmentary inscription, now in the Grotte Vaticane, mentioning Damasus and referring to work at St. Peter's financed by one Anastasia and her husband (DE ROSSI-SILVAGNI, *op. cit.*, 4097; FERRUA, *op. cit.*, 94 f.).

[1] NIGGL, the editor of GRIMALDI, *Descrizione*, 243, note 1, refers to COHEN, *Description...des monnaies frappées sous l'empire Romain*, VII, Paris, 1888, 447, n. 43. Professor Patrick Bruun, by letter, was good enough to suggest a date possibly as late as 348-357.

Presumably to feed the baptistery, Damasus caused the ground water from the Vatican hill to be deflected from the cemetery area and collected in a font: inscription "CINGEBANT LATICES MONTEM..." in the Grotte Vaticane (DE ROSSI, *op. cit.* I, 56, 114; DE ROSSI-SILVAGNI, *op. cit.*, 4098; FERRUA, *op. cit.*, 90 ff.; DIEHL, *ILCV*, 1760), in the fifteenth century reported first "*in clivio super ecclesiam beati Petri*" (Cyriacus of Ancona; FERRUA, *op. cit.*, 88), later as attached to the flank of the church "*...adhuc latere basilicae affixus...*" (VEGIO, *op. cit.*, 80; also Petrus Sabinus, DE ROSSI, *op. cit.*, 411), or to its apse "*post tribunam...*" (Timotheus Balbani; DE ROSSI, *op. cit.*, 349). The reference to a baptistery, while somewhat in doubt, is plausible.

after 390 before 410 Mausoleum of Sextus Petronius Probus, built by his widow Anicia Faltonia Proba, placed against the apex of the apse of St. Peter's and visited by Vegio, 1450 or 1451, and identified through inscriptions shortly before making room for new choir and apse of Nicholas V (VEGIO, *op. cit.*, 78 f.; DE ROSSI, *op. cip.*, I, 347 f.; DE ROSSI-SILVAGNI, *op. cit.*, 4219).

396 Pammachius gives a huge funeral banquet in memory of his wife Paula. The crowds enter the church "*...amplissimam...basilicam per illam venerabilem regiam cerula fronte ridentem...*" — does the door gleam in a bluish-green façade?[1] — and fill the nave with its coffered ceiling, the doubled aisles on either side, the vestibule and atrium where a fountain rises under a bronze baldacchino, the space fronting the doors of the atrium — that is, the landing — and the square, the *campus*, below the steps, to partake of the meal, "*...distincte per accubitus: intra basilicam et pro ianuis atrii et pro gradibus campi...*"; also: "*totam basilicam ...vel qua sub alto sui culminis medii ampla laquearibus patet et Apostolico solio corruscans... corda laetificat: vel qua sub eadem mole tectorum geminis utrimque porticibus latera difundit; quave praetento nitens atrio* (thus MIGNE; *C.S.E.L.* has, "*nitens atrium*") *fusa vestibulo est; ubi cantharum fastigatus solido aere tholus ornat...quatuor columnis...salientes aquas ambiens...*" (PAULINUS OF NOLA, *Ep. XIII*, 11 and 13; MIGNE, *PL*, 61, col. 213 ff.; *C.S.E.L.* 30, 93 ff.).

ca. 400 Mausoleum rotunda to serve burial of Honorian dynasty is built off south transept and linked to church through double apsed narthex; identified in 1544 by the grave of Maria (d. 407), first wife of Emperor Honorius (ALFARANO, 136 f.; CANCELLIERI, *De secretariis veteris Basilicae Vaticanae*, Rome, 1786, 995 ff.; DE ROSSI, *B.A.C.* I [1893], 55; *Idem*, ser. 3, III [1878], 143; EGGER, "Die Begräbnisstätte des Kaisers Konstantin", *Jahreshefte Oesterr. Archäol. Instituts* [1913], 229, n. 36); burial of his second wife Thermantia, 415, and Honorius, 425.

ca. 400 Prudentius (*Peristephanon XII*, ed. LAVARENNE, Paris, 1951, 178 ff.) refers to the gilded roofs of St. Peter's, "*tectis tenet aureis*", v. 31; to the varicolored mosaic, "*Omnicolor vitreas pictura superne tinguit undas; musci relucent et virescit aurum*", vv. 39 f.; and to the coffered ceiling, "*credis moveri fluctibus lacunar...*", v. 41. The location of the mosaic and ceiling above the shrine, rather than the baptistery, is shown convincingly by KÜNZLE, "Bemerkungen zum Lob auf Sankt Peter und Paul von Prudentius (Peristeph. XII)", *Rivista della Storia della Chiesa in Italia* XI (1957), 311 ff., esp. 338 ff.

417—432 Cantharus in atrium inscribed by Popes Boniface I and Celestine I; inscription once in the atrium "*in paradiso*" (DE ROSSI, *op. cit.*, I, 148; DE ROSSI-SILVAGNI, *op. cit.*, 4100).

440—461 Leo I refurbishes St. Peter's (and its apse vault?), "*...renovavit basilicam beati Petri (et cameram)...*"; the last two words possibly interpolated (*LP*, I, 239 and 240, note 6). The mosaic on façade, representing the Adoration of the Lamb by the Four and Twenty Elders, was donated by "*Marinianus vir inl. ex pf.* [praet] *et cons. ord. cum Anastasia inl. fem....precibus pap*[ae] *Leonis...*"; the inscription was once "*in fronte foras in ecclesia scti petri ubi IIII animalia circa Christum sunt picta*" (DE ROSSI, *op. cit.*, I, 55; DE ROSSI-SILVAGNI, *op. cit.*, 4102; DIEHL, *ILCV*, 1758).

468—483 As inscription, once "*in paradiso*", refers to construction by Simplicius I of (lateral and eastern?) porticoes in atrium: "*Cum subitis peragi fallax...Simplicius praesul celsa petenti porticibus iunctis texit ab imbre diem* [viam?] (DE ROSSI, *op. cit.*, I, 148; DE ROSSI-SILVAGNI, *op. cit.*, 4104; DIEHL, *ILCV*, 1755). Confirming inscriptions were read: one "*Credite victuras...*" on the western portico "*in fronte super portico...sancti petri*"; another "*Qui regni cla-*

[1] See below, Additional note, 279.

ves..." on the architrave of the main door, "*...super limina in introitu ecclesiae*" (DE ROSSI, *op. cit.*, I, 79 f., and 144; DE ROSSI-SILVAGNI, *op. cit.*, 4103). He also provides for baptismal services at St. Peter's to serve *regio VII* (*LP*, I, 249).

498—514 Symmachus encloses (*compaginavit*) the atrium and provides a decoration of marble (revetment?) and mosaic; he also broadens the steps ascending to the western portico, builds others possibly leading from the lateral porticoes to the aisles, decorates the church with marble (pavement repairs?) and builds a poorhouse (or just shelters for the poor?): "*Basilicam...marmoribus ornavit. Ad cantharum cum quadriporticum...marmoribus ornavit et ex musivo agnos et cruces et palmas ornavit. Ipsum vero atrium omnem compaginavit...grados ante fores basilicae...ampliavit et alios grados sub tigno dextra laevaque construxit...; ...pauperibus habitacula construxit...*" (*LP*, I, 262). Right and left of the atrium he builds *episcopia* (reception rooms?) and in the piazza below the steps ascending to the atrium, he sets up a fountain and a comfort station, "*...episcopia in eodem loco dextra levaque fecit. Item sub grados in atrio alium cantharum foris in campo posuit et usum necessitatis humanae fecit*" (*ibid.*). He also consecrates three oratories — the Holy Cross, "*oratorium sanctae crucis...*"; St. John the Baptist and St. John the Evangelist, "*oratoria II sancti Johannis Evangelisti et sancti Johannis Baptistae...*" (*LP*, I, 261 f.); all "*...ad fontem in basilica...*" — and places a canopy of four columns over the font (ALFARANO, 49, 51 f.). Whether or not this font, marked by Alfarano in the north exedra, was the one installed by Damasus remains an open question. In the piazza, below the steps of the atrium, he sets up a fountain, "*...sub grados in atrio... foris in campo...*" (*LP*, I, 262), confirmed in part by an inscription, "*ingrederis quisquis...*", formerly "*in dextero atrio*" (DE ROSSI, *op. cit.*, I, 53; DE ROSSI-SILVAGNI, *op. cit.*, 4105; DIEHL, *ILCV*, 1756). Finally, the mausoleum rotunda, off the south flank of the church, was consecrated to Saint Andrew, made accessible by ascending steps and provided with a cantharus, "*...gradus ascendentibus ad sanctum Andream fecit et cantharum posuit...*" (*LP*, I, 262).

523—526 John I continues decoration of atrium; an inscription "*quamvis clara fides...*", was read "*in sinistro atrio*" (DE ROSSI, *op. cit.*, I, 53 and 144; DE ROSSI-SILVAGNI, *op. cit.*, 4116; DIEHL, *ILCV*, 1757).

556—561 Pope Pelagius, presumably Pelagius I, does work "*in altare*", either the High Altar or the transept; see lost inscription "*vox arcana...*" (DE ROSSI, *op.cit*, I, 144; DE ROSSI-SILVAGNI, *op. cit.*, 4117)[1].

579—590 Pelagius II installs ambo; see inscription "*scandite cantantes...*", formerly "*in ambone*" (DE ROSSI, *op. cit.* I, 21, 55; DE ROSSI-SILVAGNI, *op. cit.*, 4118).

589—590 The church is described as having ninety-six columns in the nave plus four in the transept, "*... in altario*"; below the High Altar, the tomb of the Saint is visible through a *fenestella* in the altar front, "*...quatuor ordines columnarum valde admirabilium numero nonaginta sex habens. Habet etiam quatuor in altari quae sunt simul centum praeter illas quae ciborium sepulcri sustentant. Hoc enim sepulcrum sub altari collocatum...qui orare desiderat reseratis cancellis quibus locus ... ambitur...fenestella parvula patefacta immesso introrsum capite quae necessitas promit efflagitat...si beata auferre desiderat pignora...palliolum momentana pensatum facit intrinsecus...*" (GREGORY OF TOURS, *De gloria martyrum*, I, c. 28; MIGNE, *PL*, 71, col. 728 f.). A possibly contemporary note (Sylloge Palat. 591; DE ROSSI, *Inscriptiones*, II, I, 57) gives the measurements as 390 feet long, 226 feet wide.

590—604 Gregory I changes the altar arrangement, "*... fecit ut super corpus beati Petri missae celebrarentur...*" (*LP*, I, 312) and donates a silver canopy over the altar (*ibid.*).

625—638 Under Honorius I sixteen roof beams are replaced, the roof is covered with bronze tiles, removed from the Templum Romae, i.e. the temple of Venus and Roma, and the main door is covered with silver, "*...investivit regias in ingressu ecclesiae maiores, qui appellatur mediana, ex argento ...levatae sunt trabes...numero XVI...cooperuit ecclesiam...ex tegulis aereis quas levavit de templo...Romae ex concessu...Heraclii imperatoris*" (*LP*, I, 323). Confirming inscriptions, giving Honorius' name, were read on the main door as well as on the south and north doors,

[1] Below, dig. 589-590, for the use of the term *altare* for transept.

"*in ostia maioris...*", "*in porta...dextera*" and "*in sinistra*", the latter suggesting mosaic decoration and a gilded ceiling inside the church, "*...aditus interior gazarum estuat opus / depicta nitent cumulis ipsa suis / aureis metallos gemmarum clauditur ordo / superba teget blattea palla fanum...*" (DE ROSSI, *op. cit.*, I, 53, 78, 144 f.; DE ROSSI-SILVAGNI, *op. cit.*, 4119, 4120).

640—855 From 640 through the middle of the ninth century, papal activity at St. Peter's concerns primarily gifts of altar vessels and lighting fixtures of precious metal, textiles and other furnishings. Construction work by and large is limited to repairs: to the steps ascending to the atrium and to the church (*LP*, II, 28); the paving inside the church (*LP*, I, 505) and, in particular, in the apse (*LP*, II, 8); restoration of the mosaics, both on the façade (*LP*, I, 329, 374; II, 80) and in the apse (*LP*, I, 508); replacements of roof beams in aisles (*LP*, I, 503), nave and transept (*LP*, I, 505; II, 146; also *MGH*, *Epp.* III, 592, 609); other repairs to the roofs of church and atrium (*LP*, II, 1, 80, 127); repairs of window gratings and glazing (*LP*, II, 11); and installation of oratories and altars in nave, aisles and atrium.

Of greater import in our context are the following:

676—678 Pope Donus paves the atrium, "*...atrium...superiore qui est ante ecclesiam in quadriporticum, magnis marmoribus stravit...*" (*LP*, I, 348).

687—701 Sergius I, repairs an outer lean-to and cells along the flanks of the church, long in disrepair, and the window panes — glass, mica or alabaster? — in apse and façade, "*...tegnum et cubicula circumque...basilicae...per longa tempora disrupta...specula super sedem vel regias argenteas maiores...*" (*LP*, I, 374).

705—707 John VII builds an oratory, dedicated to the Virgin and richly decorated, against the façade wall of the northernmost aisle, "*Oratorium sanctae Dei genetricis intra ecclesiam beati Petri apostoli cuius parietes musibo depinxit*" (*LP*, I, 385; see also ALFARANO, 106 f.; GRIMALDI, *Descrizione*, 126 f., fig. 42; WAETZOLDT, *Kopien*, 68 f.).

731—741 Gregory III places six twisted columns, given by the exarch, at the chancel in front of the confessio next to and in line with the six old ones, placing on them silver sheathed beams with reliefs, "*...concessas sibi columnas VI onichinas volutiles ab Eutychio exarcho...statuit erga presbiterium ante confessionem tres a dextris et tres a sinistris iuxta alias antiquas sex filopares...*" (*LP*, I, 417).

752—757 Stephen II builds on the roof of the church a bell-tower — obviously wooden — gilded and silverplated, "*...fecit super basilicam turrem quam ex parte inauravit et ex parte argento investivit in quo tribus posuit campanas...*" (*LP*, I, 454); he renovates the canopy over the cantharus in the atrium, perhaps by adding four columns, "*...renovavit in atrium ante fores...qui quadriporticos dicitur, columnas marmoreas VIII...sculptas quae desuper quadrio composuit et aereum desuper conlocavit tegnum...*" (*LP*, I, 455).

around 757 The Imperial mausoleum off the south transept becomes the chapel of S. Petronilla (*LP*, I, 455, 464).

757—767 The first specific reference is made to the gatehouse rising from the eastward portico of the atrium under Paul I, "*fecit...et in atrium, ante turrem sanctae Mariae ad Grada quod vocatur Paradiso, oraculum ante Salvatorem, in honore sanctae...Mariae miro opere et decoravit magnifice*" (*LP*, I, 465); confirmed by inscription "CHRISTE TIBI SIT HONOR PAULUS QUOD DECORAT OPUS" below mosaic on gatehouse façade (GRIMALDI, *Descrizione*, 195, fig. 83; WAETZOLDT, *Kopien*, 65 f.).

792—795 Hadrian I rebuilds in the atrium the steps leading to the narthex (or those leading from the piazza to the atrium?) and those ascending from the lateral porticoes to the church, "*omnes eius grados maiores qui ascendunt in atrio, simulque et ex duobus porticibus qui ascendunt in eandem ecclesiam ex utriusque lateribus renovavit*" (*LP*, I, 503). He also sets up at the gatehouse bronze doors brought from Perugia, "*...portas aereas maiores mire magnitudinis decoratas, studiose a civitate Perusine eas deducens in basilica beati Petri apostoli ad turrem compte erexit*" (*LP*, I, 514)[1].

[1] For the meaning of *turris*, below, 269 f.

796—797 [1] Leo III repairs nave, transept, atrium, fountain and the vaulted gatehouse, "*sarta tecta...basilicae...id est navem maiorem, ...aliam navem super altare, cum quadriporticos...et fontes... ante fores argenteas, verum etiam et turrem cum cameris suis, a summo usque ad summum... restauravit...*" (*LP*, II, 1).

800, and 809 Leo III constructs adjoining the atrium to the south a beautiful round bath, a large splendid building with a dining room, a bath for the poor and for pilgrims and a triconch reception hall,: "*Fecit...iuxta columnam maiorem* (i.e. the obelisk) *balneum in superiore positum, constructum in rotundum, mirifice decoratum...*" (*LP*, II, 27 f.); "*...iuxta ecclesiam beati Petri...in acoli fecit triclinio...et absida de musivo...alias et absidas duas...*" (*LP*, II, 8); "*fecit...iuxta...grados parte dextra atrii domum...mire magnitudinis et pulchritudinis decoratam, in qua etiam et accubitos collocavit...et iuxta eandem domum pro subsidiis Christi pauperum atque peregrinorum balneum...*" (*LP*, II, 28).

827—844 Gregory IV repairs at St. Peter's the ceiling (?; *porticus*) in the oratory above the gatehouse, the narthex in front of the church, the mosaic on the façade of the church and the portico of the gatehouse above the steps ascending from the piazza. He also builds an apartment for the Pope to retire to after services to the south near the obelisk (*accola, aguglia*)[2], "*...totam porticum super oratorium sanctae Dei genetricis quod Mediana dicitur noviter ex trabibus ceterisque lignis ob decorem basilicae dedicavit. Immo et aliam...porticum ante valvas argenteas novo opere cultuque...perfecit. Necnon et in fronte paradisi iamfate aecclesiae principali musibo cuncti quae a priscis temporibus in eodem parieti erant diruta...pingere ac restaurare decrevit. Renovavit...et porticum eiusdem ecclesiae quae super gradus...per quos populus orationis voto indifferenter habet accessum...Fecit etiam iuxta Accolam pro quietem pontificis ubi post orationes matutinales...eius valeant membra soporari, hospicium parvum sed honeste constructum...*" (*LP*, II, 80 f.).

847—855 Leo IV repairs the left (north?) aisle of the church, "*...cum porticus partis laevae...prae nimia vetustate...basilicae cecidisset...*" (*LP*, II, 127).

Later construction work of major importance is recorded in the twelfth and thirteenth centuries:

1123 Calixtus II consecrates new High Altar enclosing Gregory's (Egidi, *Necrologi ...della Provincia Romana* (Fonti per la Storia d'Italia), I, Rome, 1908, 286).

1154—59 Hadrian IV raises the walls of the exedra off the north transept to the full height of the nave, "*...in ecclesia beati Petri...super oratorium sancti Johannis in fonte murum a tribus lateribus erigens navi eiusdem ecclesiae coequavit...*", and repairs the roof of the exedra on the south transept, "*...tectum sancti Processi resarcivit...*" (*LP*, II, 395; Christern, I, 153).

1167 The staff of St. Peter's surrenders the church to Frederick Barbarossa after the burning by his soldiery of the gatehouse, "*custodes vero ecclesie, formidantes ne tota ecclesie fabrica incendio solveretur, post combustam sancte Marie in Turri, ecclesiam cum eneis portis et vicinis porticalibus...beati Petri basilicam...tradiderunt.*" (*LP*, II, 416).

1198—1216 Apse mosaic is replaced under Innocent III; inscription, identifying donor figure (Alfarano, 30; Waetzoldt, *Kopien*, 71; Ruysschaert, *Rendic. Pont. Accad.* 40 [1967-68], 295 ff.).

1227—1241 Façade in its upper parts is rebuilt under Gregory IX, topped by a cavetto and pierced by two rows of tracery windows, three to each level; the mosaic is remodelled, more likely replaced (Alfarano, 20); inscription identifying donor figure, "GREGORIUS PAPA VIIII" (Grimaldi, *Descrizione*, 164; Waetzoldt, *Kopien*, 67 ff.).

Major construction work on the old basilica ends around that time. Only redecoration and roof repairs followed in the late thirteenth, fourteenth and fifteenth centuries, leading to the constuction of New St. Peter's, starting in 1506, and the demolition of the old basilica. The major dates concerning this work are listed on p. 184 f.

[1] Dates in this and the following digest are given according to Hülsen, «Osservazioni sulla biografia di Leone III», *Rendic. Pont. Accad.* I, (1923), 107 ff. We fail to understand the date 792-793, proposed by Geertman, *More veterum*, Groningen, 1975, 38.

[2] The meaning of *porticus* in the passage quoted is doubtful; see Duchesne, *LP* II, 84, note 14, and Vogel, *LP* III, 123. Rather than portico in the ordinary sense, it seems to mean ceiling or roof. As to *accola*, see Vogel, *op. cit.*, III, 118, as against Duchesne, *op. cit.*, II, 38, note 39.

D. GENERAL DESCRIPTION

A general description of the basilica Constantine erected on the southwestern slope of *mons Vaticanus* over the *tropaion* of Peter cannot be presented in the way that most of the Early Christian basilicas of Rome have been treated in this *Corpus*. The majority still afford to the visitor at least some small traces of their original structure immured in a fabric many times damaged, repaired, remodelled and restored. The buildings of which they form a part, moreover, can be seen in their relation to the surrounding topography of the city. The relatively small portions of Old St. Peter's that have survived the construction of the new church form discrete elements buried beneath diverse parts of the old church's colossal successor. No part of the ancient basilica can be seen against the background of its initial ambient; and, indeed, so compartmented are its preserved remnants that they cannot be appreciated in any single synthetic view.

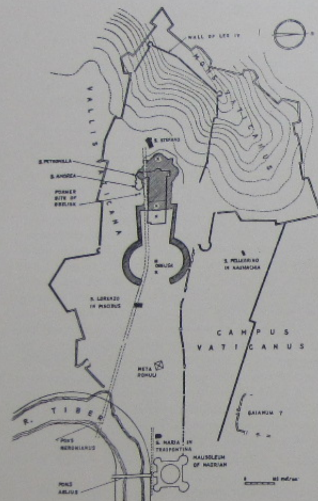
The details of the Constantinian basilica's original form and appearance will be discussed in the sections devoted to the available evidence and to the graphic and verbal restoration. It is enough at this point to recall that until the beginning of the sixteenth century, when construction of the new Renaissance basilica commenced, the fourth century church survived in remarkably little-altered form [1]. The general characteristics of that structure are well-known. The *tropaion* of the Apostle was enshrined on the chord of a generous apse that opened eastward to a long, rectangular transverse hall, a transept, whose short northern and southern ends opened through columnar screens into lower alcoves or exedras. Along its eastern side this transept communicated through five openings with a broad and lofty five-aisled basilica. The basilican hall, in turn, was preceded at the east by an atrium as deep and as wide as the church itself. A stairway linked the atrium with an irregular, unpaved open area, the predecessor of the modern Piazza S. Pietro. The entire complex appears to have been laid out in accordance with a comprehensive plan made in the Constantinian period. There is no evidence that the body of the church was not constructed in a single, uninterrupted campaign. The atrium and its connection with the area before the church, however, appear not to have achieved their definitive form before the early sixth century, although the former is known to have been in use by the end of the fourth century [2].

Although none of the numerous sixteenth century drawings of Old St. Peter's show it in its entirety, they are the most eloquent witnesses to the general character of the Vatican ambient [3]. They show that the narrow crest of the Vatican Hill, some four hundred meters west of the *tropaion* of Peter, and its northeastern extension to the bluff of the Belvedere formed a more conspicuous and impressive backdrop to the old church than it does today, obscured as it is by the wall of Maderno's façade of New St. Peter's and the rising mass of Michelangelo's dome. Now as then, in rainy seasons, surface and subterranean water courses down the hill's southwestern slope to cross the site of the church. This water posed problems to Constantine's builders as it did again when excavations were made beneath New St. Peter's between 1940 and 1949.

[1] The only significant architectural changes were: externally, the construction of an upper chamber above the exedra at the northern end of the transept by Hadrian IV, 1154-1159 (*LP*, II, 395, and Christern I, 153 f.), which brought it to the height of the transept's roof, and the addition of a deep cavetto below the gable of the eastern façade of the nave when its mosaic decoration was remade by Gregory IX, 1224-1241, (Alfarano, 31; Grimaldi, *Descrizione*, 131v, 192r); and, internally, the raising of the floor of the presbytery approximately 1.45 m. above its Constantinian level, apparently by Gregory the Great, 590-604 (*LP*, I, 312), and the construction of a semi-annular crypt with access to the Confessio beneath it.

[2] See below, 261 ff.

[3] Frutaz, *Piante*; Ehrle - Egger, *Studi e documenti per la storia del Palazzo Apostolico Vaticano*, 4, Vatican City, 1936, pls. X-XIV; Egger - Hülsen, *Codex Escurialensis*, II, Vienna 1905-6, fols. 7v-8r.



(Toynbee-Ward Perkins)

Fig. 146. St. Peter's and Vatican area, indicating classical and Early Christian elements.

Old drawings clearly show that the numerous structures, attracted to the church by the sacredness of the site and the importance of Constantine's foundations in the later history of the Roman Church, lay around and against it but did not obscure its form. Only two of the monuments adjacent to the church habitually shown in old drawings, a domical rotunda and an obelisk to the south, antedate it and document the site's pre-Constantinian configuration (figs. 146, 147)[1].

Recent excavation has confirmed Pliny's statement that the granite obelisk brought from Egypt by Caligula stood in the Circus of Gaius and Nero on the Vatican[2]. It is now certain that it rose on the line of the spina of the circus whose location has only recently been established beyond doubt. It ran in an east-west direction taking advantage of the natural valley that separates the Vatican from the northern spur of the Gianicolo and it seems to have extended from near the Vatican Palazzo di Giustizia to just beyond the east edge of the south colonnade of Piazza S. Pietro, almost 500 m. long[3]. The circus, constructed in the second quarter of the first century A. D., is the earliest documented monument in the Vatican area. Castagnoli, who excavated the foundation of the obelisk in the Piazza dei Protomartiri Romani between the present church and its eighteenth century sacristy, thinks that the circus may have been a hippodrome of earthwork with wooden seating. But this seems contrary to Magi's findings[4].

[1] A conspectus of the archaeological data for the site is given in *Carta Archeologica di Roma*, I, Florence, 1962, section G.

[2] PLINY, *Historia naturalis*, XXXVI, xv, 74 (Loeb Classical Library, X, 58).

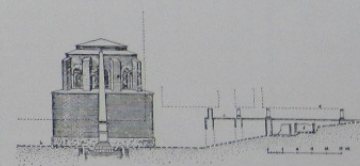
[3] Excavations in 1957, 1959-60 in CASTAGNOLI, «Il Circo di Nerone in Vaticano», *Rendic. Pont. Accad.* 32 (1959-60), 97 ff.; excavations and discoveries 1948, 1972 and 1973 in MAGI, «Il Circo Vaticano...», *ibid.* 45, (1972-1973), 37 ff. and pl. III.

The location of a huge curved construction in *opus testaceum*, identified by Magi as the *carceres* at the east end of the circus beyond the east edge of Bernini's south colonnade, is far to the east of the site where GRIMALDI, *Descrizione*, 242 (c. 206 v.), saw at the time of the construction of Maderno's façade a semicircle of *opus quadratum* under the Archpriest's house (JONGKEES, 53, suggests this may have been the *carceres*). It is also far from the spot, *Carta Archaeologica*, I, G-77, recording hearsay finds reported by KIRSCHBAUM, *Gräber*, 16 f.

[4] CASTAGNOLI, *op. cit.*, 105, citing VACCA, *Memorie* 62 (in FEA, *Miscellanea I*, Rome 1836, LXXX), and *Carta Archaeologica*, I, G-43, favouring wooden construction. However, what appear to be the *carceres* beyond Bernini's north colonnade were built in *opus testaceum*, as was a wall, possibly the north wall of the circus, seen in 1938 below the semicircular excrescences of the steps ascending Maderno's façade, see MAGI, *op. cit.*, 53 ff. and 64 f.

The circus must have been accessible from the city. Numerous traces of a Roman road leading westward from the bridgehead of the *pons Neronianus* have been found in the Borgo S. Spirito[1]. The point at which the road divided into a north-bound and a west-bound limb has yet to be found, although it probably lies near Piazza S. Pietro. A short stretch of paved road seen by Giacomo Grimaldi in the excavation for the southeast corner of the façade of the new basilica may be later than the first century, and it is not conclusive evidence that a major artery ran between the Circus of Gaius and Nero and the site of the future church to its north[2]. Castagnoli is probably correct in predicting the location of the major road to the south of the circus in the Vallis Vaticana which is the natural route for east-west communication[3].

When the circus ceased to be used for *ludi* is unknown. It had certainly fallen into disuse by the second half of the second century when a simple chamber tomb with inhumation burials was erected near the southern face of the obelisk[4]. An inscription of the second quarter of the second century, found on a mausoleum sixty meters north of the obelisk in the necropolis below the nave of St. Peter's, directed the heirs of the tomb's occupant to erect it "IN VATIC(*ano*) AD CIRCUM"[5]. This could refer either to an actively used circus, or it could be a topographical designation that, along with the obelisk, survived the abandonment of the hippodrome. The former would hold if Castagnoli's geological analysis is correct; he showed that the tomb stood directly on prepared soil characteristic, in its absorbent strata, of a race track[6]. Grimaldi saw portions of the foundations of the southern files of columns of the old basilica brought to light during the construction of the new church, and he identified them as the northern walls of the Circus of Gaius and Nero[7]. This view prevailed, despite some scepticism, until the recent Vatican excavations proved the remains to be Constantinian[8]. Yet the southern half of the basilica must have overlapped the northern bank of the abandoned circus as the line of the spina is only some thirty-five to forty meters south of the south face of the outer foundation wall of the basilica[9].



(Castagnoli, Rendic. Pont. Accad.)

Fig. 147. St. Peter's. Obelisk and rotunda (S. Andrea), reconstruction.

[1] *Carta Archeologica*, I, G-33, 70, 78, H-78, 88, 89. The name *pons Neronianus* first appears in the twelfth century (*Mirabilia*, VALENTINI-ZUCCHETTI, *Cod. Topografico*, III, *passim*.). The bridge is not mentioned in the *Regionary Catalogues* and is, therefore, assumed to have been destroyed by the fourth century. Constantine's basilica would have been approached from the city by *pons Aelius* or via Trastevere until the construction of Ponte Vittorio Emmanuele II.

[2] GRIMALDI, *Descrizione*, 340, (c. 294). The pavement was found at the southeast corner of the new church approximately 11.50 m. below its level. JONGKEES, 53, suggested that it might be a continuation of the circus' spina.

[3] CASTAGNOLI, «Il Circo di Nerone in Vaticano», *Rendic. Pont. Accad.* 32 (1959-60).

[4] *Ibid.*, 106.

[5] Vatican necropolis, Mausoleum A (of Gaius Popilius Heracla); DE VISSCHER, «À propos d'une inscription nouvellement découverte...», *L'Antiquité Classique* 15 (1946), 117 ff.; reproduced in NASH, *Dictionary*, I, fig. 269.

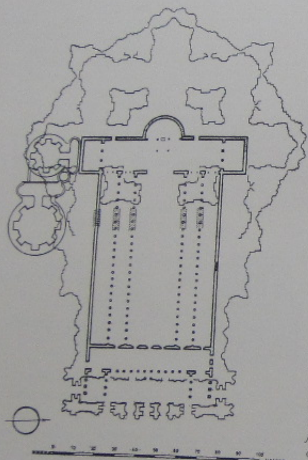
[6] CASTAGNOLI, *op. cit.*, 114.

[7] GRIMALDI, *Descrizione*, I, 206 (c. 241 f.), 293 (c. 339).

[8] *Esplorazioni*, I, 131.

[9] The known widths of Roman circuses are: Circus Maximus, total width 150 m., width of arena 80 m.; Circus Varianus, total width 125 m.; Circus of Maxentius, total width 89 m., width of arena 75 m. (NASH, *op. cit.*, I, 236, 241; COLINI, «Edifici Sportivi di Roma Antica», *Capitolium* 35 [Olympic Issue, 1960], 36). Thus the arenas of both the Circus Maximus and the Maxentian Circus are approximately equal to twice the distance from the obelisk of the Neronian Circus to the south foundation of Old St. Peter's. The gradient at the southern foundation of the basilica projected by the Vatican excavators (*Esplorazioni*, I, fig. 106; CASTAGNOLI, *op. cit.*, fig. 43) suggests that of an earthen *cavea* of a hippodrome (JONGKEES, 50).

The domical rotunda, so prominent in most sixteenth century views of the area, rose immediately to the west of the obelisk and on its axis (fig. 147). It was constructed in the Severan period, probably in the second decade of the third century[1]. Since it was built as close as possible to the obelisk it was necessary for its massive, conglomerate foundation to overlap part of the second century tomb chamber. The sepulchral rotunda is the first dated example of the type that occurred subsequently in and near Rome in the third century and which became ubiquitous among imperial mausolea of the Tetrarchical and Constantinian periods[2]. It was obviously the tomb of a person or a family of wealth and power whose name is unknown[3]. Nor is it known if the mausoleum was still maintained at the time Old St. Peter's was erected to the north of it. Standing as close as it did to the western face of the obelisk its original entrance should be sought on the opposite side. And perhaps the vestibule *a forcipe* shown at that point in a drawing attributed to Jacopo Sansovino was its original entrance[4]. If so, it would be an early example of that form of vestibule so widespread among centralized buildings of the time of Constantine and later in the fourth century. Around 400 a smaller domical mausoleum of similar plan was built at the southern *terminus* of the transept of the Constantinian basilica to shelter the graves of the family of the Emperor Honorius (fig. 148)[5]. Linked by a narthex *a forcipe* to the south exedra, it was dedicated around 757 to S. Petronilla and became the chapel of the Frankish rulers[6]. As the Cappella del Re di Francia it remained standing until it gave way to the construction of the south transept of New St. Peter's.



(Toynbee-Ward Perkins; complemented)

Fig. 148. St. Peter's. Constantinian basilica and new church, plan.

The building of the Honorian mausoleum would have seriously impeded access to the older rotunda by blocking the narthex on its west face opposite the obelisk. The problem, perhaps,

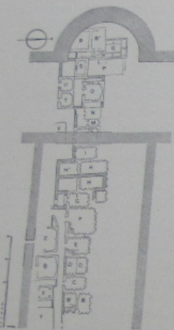
[1] CASTAGNOLI, «Il Circo di Nerone in Vaticano», *Rendic. Pont. Accad.* 32 (1959-60), 104.
[2] CREMA, *L'architettura romana*, Turin, 1959, 536 f., 624 ff.
[3] CASTAGNOLI, *op. cit.* attributes the construction to Caracalla's reign.
[4] UA 4336; BARTOLI, *Monumenti*, IV, CCCLVII, fig. 262.
[5] KOETHE, «Zum Mausoleum der weströmischen Dynastie bei Alt-Sankt-Peter», *Röm. Mitt.* 46 (1931), 9 ff.; also CANCELLIERI, *De secretariis...Basilicae Vaticanae...*, Rome, 1786, pl. III, 1838 f.
[6] Above 175, dig. around 757.

only became acute when Pope Symmachus (498-515) consecrated the older rotunda, dedicating it to St. Andrew[1]. At an unknown time, as sixteenth century drawings show, beginning with Jacopo Sansovino's plan[2], a direct access was provided from the rotunda to St. Peter's by means of a passage from the vestibule of the Honorian mausoleum. From that moment the rotunda's fortunes were even more securely linked to those of St. Peter's. Subsequently dedicated to S. Maria della Febbre, it became in the reign of Gregory XIII (1572-1585) the sacristy of the Vatican Basilica and continued as such after a portion of its northern side was truncated to permit the eastward extension of the south conch of New St. Peter's[3]. It was demolished in 1777 under Pope Pius VI to make way for a new and larger sacristy[4]. It thus survived the destruction of the last remnants of Constantine's church by more than a century and a half. Its disappearance, paradoxically, left the obelisk, the oldest of the Vatican monuments, as the sole surviving witness to the site's ancient history. Yet it was no longer in the position in which Caligula had it placed, since, upon the command of Pope Sixtus V, Domenico Fontana had removed it in 1586 to the position it presently occupies at the center of Piazza S. Pietro[5].

The location of the pre-Constantinian Vatican monument, of whose existence we have the most abundant epigraphic evidence, is unknown. A *Phrygianum* or shrine of Magna Mater and Attys is recorded in the *Regionary Catalogues* and documented in ten inscriptions[6]. Other literary sources establish its presence in the Vatican area as early as the second century A.D. None of the inscriptions have been found *in situ*. Most, inscribed on altars, were discovered during the demolition of the Constantinian basilica and the construction of its replacement along the southern flank of the old church. This is the zone that required filling for the construction of the church and of subsequent structures adjacent to it, and it is in such a context that the inscriptions have been found. Grimaldi states, for example, that seven inscribed altars were found during the excavation for Maderno's façade „*sotto terra circa 30 p. ... gettato uno sopra l'altro, nel cantone della facciata verso Campo santo*"[7]. These date between 305 and 390, which proves that the shrine of Cybele survived the construction of the Constantinian basilica only to be destroyed and despoiled in the general suppression of pagan cults in the last decade of the fourth century. The inscriptions give no information about the form of the shrine. It may have been a temple, but it may as easily have resembled the open *Campus* of Magna Mater at Ostia[8].

Virtually nothing has come to light at the corresponding northern side of St. Peter's to document its use in antiquity. In view of its sharply ascending gradient and the absence of any traces of ancient roadways, it may be that it remained open land[9]. Indeed, even today

[1] Above, dig. 498-514. In view of the positions of the obelisk and the Honorian mausoleum, the steps mentioned must have been placed either to the north or to the south. The original floor level is unknown. Like many later domical mausolea, it may have been raised above a low, vaulted sepulchral chamber that would have brought it close to the level of the Constantinian basilica. Such an arrangement, however, ill accords with the vestibule *a forcipe*.
[2] Above, 167, 1505-1512(?). It remains in doubt when the communicating corridor between the main bodies of the two rotundas, as shown by Alfarano, was built, if it ever existed.
[3] FRANCESCO CANCELLIERI, *Sagrestia Vaticana eretta dal regnante Pontefice Pio Sesto*, Rome, 1784, 7 (made into sacristy), 41 (demolished).
[4] Clearing of the site began in 1776, but demolition of the rotunda commenced in August 1777, *ibid.*, 36 ff.
[5] DOMENICO FONTANA, *Della trasportazione dell'obelisco Vaticano e della fabbrica di Nostro Signore Papa Sisto V*, Rome, 1590.
[6] *Regionary Catalogues*, ed. VALENTINI-ZUCCHETTI, *Cod. Topografico*, I, 144. Above, 171, dig. 319-22, for references to the inscriptions.
[7] GRIMALDI, Vat. lat. 6438, c. 43; see also *Descrizione*, 89 (c. 54 v.).
[8] MEIGGS, *Roman Ostia*, Oxford, 1960, 356 ff.
[9] *Carta Archeologica*, I, G-17, citing SEVERANO, *Sette Chiese*, 7 (*recte* 78) which describes «*grandi vestigi di altri fabriche antiche*» after mentioning the remains of SS. Giovanni e Paolo north of the transept. These may have been remains of additional Christian buildings.



(Toynbee-Ward Perkins)

Fig. 149. St. Peter's. Vatican necropolis (Constantinian foundations and partition walls shaded).

much of the area to the north and northwest in the Vatican Gardens is unencumbered by buildings.

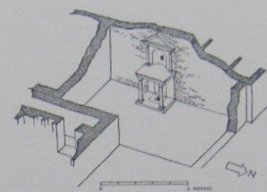
Constantine's basilica was founded to house and to magnify the *tropaion* of Peter which stood to the north of the circus, by tradition the scene of his martyrdom. The *tropaion* (P in fig. 149) rose within a linear necropolis whose axis, diverging but slightly from the longitudinal east-west axis of the basilica, followed that of the circus (fig. 149) [1]. It extended both to the east and to the west of the area eventually covered by the fourth century church.

The lowest levels of the Vatican necropolis have been tested archaeologically only in the immediate vicinity of the *tropaion*. There excavation reached undisturbed earth. If the *tropaion* is not only a cenotaph of great antiquity, but actually stands over the tomb of the Apostle, which is entirely possible although no unassailable archaeological data have appeared, the burial would be the earliest to be documented in the necropolis. The *tropaion* is found, however, in immediate association with inhumation tombs, one of which, on the basis of a stamped tile in its humble fabric, could be as early as the reign of Vespasian (68-79 A.D.) [2].

The simplicity of the earliest inhumation burials gave way in the second quarter of the second century to a steadily increasing number of house tombs that by the early third century formed two densely packed rows of mausolea built one against the other. The tombs in the northern row are earlier than those in the southern. All face south. Recalling that the contemporary tomb found at the site of the obelisk faces north, it is possible that a secondary road, providing access to the necropolis, ran along the northern edge of the track of the abandoned circus in the second century. Probably the exhaustion of open plots more conveniently near the Tiber, and hence to the city, led to the more intensive exploitation of the site of the Vatican necropolis and to the increase in the value of its land for cemeterial purposes. The latter is reflected in the solidity of the construction of the mausolea — in *opus caementicium* faced, where visible, with excellently laid brick and moulded tile and, in less conspicuous areas, with *opus listatum* — as well as in the elegance of their internal appointments and decoration [3]. Inscriptions from these tombs show them to have been built by members of the prosperous middle class of freedmen and their descendants, some of whom were adherents of Eastern cults [4]. Despite the inevitable changes in ownership in time which, in more than one case, saw the introduction of Christian burials, the tombs continued in active use until the construction of the basilica.

By that time the *tropaion* of St. Peter, which rose — significantly — in the only open court remaining between the file of later tomb structures (figs. 149, P; 150), had been

[1] Castagnoli, 117, 119, fig. 22, «Il Circo di Nerone in Vaticano», *Rendic. Pont. Accad.* 32 (1959-60).
[2] *Esplorazioni*, I, 115.
[3] *Esplorazioni* I, chapters III-VIII.
[4] Toynbee-Ward Perkins, 105 ff.



(after Esplorazioni; Toynbee-Ward Perkins; Kirschbaum, Gerber)

Fig. 150. St. Peter's. Vatican necropolis, *Campo* P and pre-Constantinian *tropaion*, reconstruction.

successively altered in form and ground-line. At least since early in the second half of the second century it had been the locus of veneration of the Apostle by the Roman Christian community [1]. The desire to house it and to present it reverently and triumphantly was the dominant intention when Constantine, perhaps at the behest of Pope Sylvester, undertook to erect the Vatican Basilica. If its location established that of the church, its altitude fixed the level of the church's paving. These were decisions made by patron and priest. It remained for the imperial architects to satisfy the Vitruvian imperatives of stability, convenience, and beauty. Complying with the first two criteria demanded razing the necropolis, except for the *tropaion*, to a level below the projected floor of the basilica. But, obeying the principle of efficiency and, perhaps, with some concern for *violatio sepulchri*, no more was destroyed than was necessary. The tombs were employed in much the same way as the more regular cells of the barracks of the *Equites singulares* had been used beneath the nave of the Lateran basilica to support the paving of the church [2]; the mausolea roofs were removed and the chambers filled with earth. New walls were thrown across large or inconveniently shaped areas. This work formed not only a bedding for the basilica's pavement, but insured a more dense fill and reduced the danger of its settlement and sapping under the action of ground water. The terrain of the necropolis sloped gently but steadily to the east and more sharply from the north to the south. The line of the latter was more irregular, due to excavation into the northern incline to provide level floors for the second century tombs. Some additional cutting to the north appears to have been necessary in order to accommodate the projected floor level of the basilica and probably to create a drain along its northern perimeter. The southern half of the basilica, on the other hand, rose completely on newly filled material that at some points reached at least ten meters [3]. The basilica erected on a platform so constructed towered over the rotunda and the obelisk to the south and dominated the entire Vatican area as no previous structure had done. It continued to do so for almost twelve centuries. No Early Christian basilica in Rome so transformed the appearance, the history and the fate of the quarter in which it was erected as Old St. Peter's.

The history of the design, planning, and construction of the present church is not the concern of this work. Since, however, the erection of New St. Peter's and the demolition of the Constantinian basilica occurred jointly over a period of slightly more than a century, and since the new church offers firm points of reference in discussing elements of the old basilica, it will be useful to enumerate the salient events in the construction as they affected the destruction of Old St. Peter's [4].

[1] Toynbee-Ward Perkins, 135.
[2] Above, 27.
[3] *Esplorazioni*, I, 153.
[4] For the chronology of New St. Peter's, see conveniently, Geymüller, and Ackerman, *The Architecture of Michelangelo*, II, London, 1961, 83 ff.; see also Graf Wolff Metternich, *Peterskirche* (plates only).

1451—1453 Construction of a long chancel, terminated by an apse, is begun behind the Constantinian transept and apse. Commissioned by Pope Nicholas V, it was built by Bernardo Rossellino, following perhaps a design of Alberti. Its construction necessitated the demolition of the late fourth century Mausoleum of Probus addossed to the outer face of the apse of Old St. Peter's.

1505—1506 Pope Julius II commissioned Bramante to design and to begin construction of a new church focussed, like the old church, on the shrine of St. Peter. The first stone was laid on 18 April, 1506.

1506—1524 The shrine of the Apostle and the Gregorian chancel[1] were enclosed in a protective structure, the *tegurium*, built against the Constantinian apse and the western wall of the transept directly adjoining it. By 1511 the four crossing piers, their arches and pendentives, designed by Bramante were complete. By 1514 the apsed terminals of the north-south arm of a cruciform plan, intended to be enveloped by ambulatories, and the four counterpiers to the north and south were completed to the height of one storey. For economy's sake the Rossellino choir was completed and vaulted, 1510-1511. The work required the demolition of most of the eastern wall of the old transept, including the northeastern and southeastern corners of the exedrae that otherwise remained standing; the removal of the screening columns at the ends of the two outermost aisles of the nave and the first three columns of all four files of nave columns counting from the transept, and the superstructure and roof they supported. The construction of the southeastern counterpier and the projection of the southern ambulatory further necessitated the demolition of the mausoleum of the Honorian family dedicated in the eighth century to S. Petronilla.

1524—1527 Two additional counterpiers were constructed to one storey height by Antonio da Sangallo the Younger and Baldassare Peruzzi eastward from the crossing, requiring the removal of the seventh, eighth, and ninth columns of the nave colonnades, counting from the west, and their attendant superstructure. The fourth, fifth, and sixth columns of the old structure remained standing but their clerestory walls were razed. The situation is represented in Heemskerck's drawing, Berlin II, f. 52 (fig. 202).

1538—1544 The building site of New St. Peter's was separated from the old church by the *muro divisorio* constructed by Antonio da Sangallo on the line of the eleventh column of the old nave counting from the eastern façade. The floor level of the new church was established at 14½ *palmi* (3.24 m.) above that of the old church but only installed in the southern arm, 1543-1544. This must have required razing the remaining portions of the old south transept. The old paving from the *tegurium* to the *muro divisorio*, however, was recorded as in place in 1574. A broad flight of steps leading down to this level from the direction of the south arm was discovered during the construction of the Cappella dei Lituani to the south of the corridor of the Confessio in 1968-70. It is perhaps to be associated with the installation of the raised paving in the south arm. The remaining columns and superstructure of the old nave, but not its outer walls, must have been pulled down west of the *muro divisorio* soon after its construction. The situation is shown in a drawing erroneously attributed to Heemskerck, Berlin I, f. 13r (fig. 206).

1544—1590 The period of Michelangelo's superintendency and the completion of his design after his death (1564), principally by Giacomo della Porta, encompassed the demolition of all of the remaining portions of the transept (northern arm in 1548) not built on to the *tegurium*, as well as the Rossellino choir (1585). Some remains of the old church were removed from the area of the crossing of the new church (1580-1585).

1592—1605 Bramante's *tegurium* and the Constantinian apse were razed in order to make way for a new pontificial High Altar (1592). The Sacre Grotte were constructed and the floor raised on them in the crossing and nave. The Cappella Clementina was constructed to the west of the shrine of St. Peter and the altar of the Confessio (fig. 225). The remaining portion of the Constantinian apse wall below the level of the new church's pavement was preserved in the inner wall of the semicircular corridor leading to it, except at its apex where it was demolished to create a door to the chapel. Vestigial remains of the old pavement were preserved in front of the base of the raised Gregorian chancel, concealed below the level of the new pavement.

[1] Above, fig. 590-604, and below, 159 ff.

1608—1618 Carlo Maderno completed the nave of the new church and constructed its narthex, façade, and steps. The work required the demolition of all of the remaining superstructure of the old church: the nave east of the *muro divisorio*, the atrium and gatehouse, and the steps leading to Piazza S. Pietro.

1776—1777 The third century sepulchral rotunda, dedicated to St. Andrew and subsequently to S. Maria delle Febbre, was razed to make way for Marchioni's new sacristy of St. Peter's to the south of the church.

1940—1970 Excavations were made around the Confessio, in the northern and southern aisles and below the Grotte Vecchie, 1940-1949. The Cappella di S. Columba was constructed in 1954; the Cappella della Madonna di Czenstochau, in 1958; and the Cappella dei Lituani, in 1968-1970.

E. ANALYSIS

1. Archaeological evidence

The reader is referred to the general plan (pl. V) and its characterization as given in section D. GENERAL DESCRIPTION[1] in following this analysis. The Vatican excavators have published a descriptive analysis of the physical evidence of the surviving portions of the basilica[2]. Jocelyn Toynbee and John B. Ward Perkins have written a knowledgeable commentary based on this evidence and on their own observations[3]. Our analysis, therefore, will mainly summarize the data presented in the earlier publications. It will discuss in detail only those elements that observation has shown the excavation report to have overlooked or where it has been too summary or in error. The material reviewed will be grouped into three sections: the foundations, the rising walls, and isolated elements existing either *in situ* or as *disiecta membra*.

a. FOUNDATIONS

The basic characteristic of the preserved foundations of the Constantinian basilica is their diversity of materials, techniques and dimensions. The variety is obviously the result of the builders' analysis of the structural demands imposed on each element of the foundations in its position in the building. The preserved foundations form three groups: those of the nave; those of the apse and the transept; and non-loadbearing walls erected in the Vatican necropolis under the central nave and the transept.

Stretches of five foundation walls under the nave were encountered by the Vatican excavators (figs. 148, 151): that of the southern exterior wall; those under the two files of columns in the southern half of the nave that separated it into two side aisles and a central nave; and those under the two corresponding files of columns in the northern half of the nave[4]. The last two are no longer visible. The others were made accessible to the visitor to the new exhibition halls south of the Grotte Vecchie and the Vatican necropolis. The three foundations from the southern half of the nave are formed of a core of *opus caementicium* laid, according to the Vatican excavators, in the open and not set in trenches[5]. The scaffolding holes observable in the

[1] Above, 177 ff.
[2] *Esplorazioni*, I, 147 ff.
[3] TOYNBEE-WARD PERKINS, 195 ff.
[4] *Esplorazioni*, I, 150 f.
[5] *Esplorazioni*, I, 151.



(Esplorazioni)

Fig. 151. St. Peter's. Section through necropolis and foundation walls of Constantinian nave.

foundation below the southern colonnade of the nave confirm this. The foundations are faced with carefully laid *opus testaceum* and *opus listatum* set in thick courses of mortar whose faces have been compacted in a concave profile presumably with the handle of the mason's trowel (figs. 152, 153)[1]. The facing techniques are closely paralleled by other Constantinian masonry of the best quality in Rome in both religious and secular buildings.

The foundation of the outer southern wall beginning just below the Constantinian paving level is preserved to a depth of *ca.* 3 m. although only the uppermost meter is presently visible. The wall is 2.68 m. (9 R. ft.) thick. It is faced externally with brick and tile and internally with *opus listatum*. The original surface of the mortar is not preserved. The foundation of the colonnade separating the two southern outer aisles was observed to a depth of 5 m., but again only its uppermost meter can now be seen (fig. 152). Its width, according to the Vatican excavators, is that of the exterior foundation, but as its northern face is buried in a modern wall of the Grotte annex, this cannot be verified. It is faced on both sides with *opus listatum*[2]. The roughly 12 m. of the foundation of the southern colonnade of the nave constitute the most extensively visible portion of the basilica (fig. 153). It extends *ca.* 7 m. from the paving level down to the footing which is set, according to the excavators, on undisturbed soil. The foundation rises 1.45 m. at a thickness of 2.06 m. with a facing of brick, and thence at a thickness of 1.90 m. in *opus listatum*[3]. The Vatican excavators saw small portions of the foundations of the two



(R. F. S. P.)

Fig. 152. St. Peter's. Constantinian basilica, foundation wall of the aisle colonnade, south.

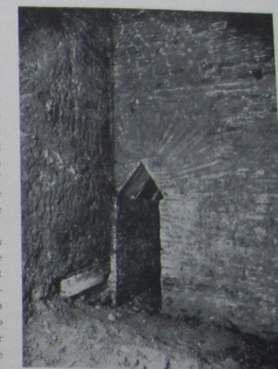
[1] In the brick facing a modulus of five courses of brick and their mortar beds varies from 31.7 to 32.7 cm.; the bricks range in thickness from 2.5 to 4.0 cm; the mortar beds from 2.5 to 6.0 cm. In the *opus listatum* the alternation of tufa and brick courses varies - one tufa and one brick course, two tufa and one brick course, one tufa and two brick courses, the last being the most common modulus averaging 23.5 cm. in height.

[2] The northern face, no longer visible, was observed by R. Krautheimer and W. Frankl in 1948. Its *opus listatum* facing conformed to the norms listed in n. 1, above.

[3] *Esplorazioni*, I, 151. At the base of the foundation there is a construction passageway 60 cm. wide surmounted by two bipedales set *a cappuccino*.

northern files of columns that are no longer visible[1]. They did not record their widths in the excavation report, but in the published cross-section of the nave they are shown as having the same widths as the corresponding foundations in the southern half of the nave[2]. If this is correct, they contradict the excavators' analysis of the differences in the widths of the southern foundations which they attribute to the greater depth required of the two southernmost foundations to reach bearing soil. According to the excavators' findings, solid bearing was far closer to the grade in the northern half of the site. The question, therefore, must remain open.

Constantinian walls found elsewhere in the foundation zone differ greatly from those just described. These other walls did not support parts of the superstructure but served to consolidate the fill, to help sustain the basilica's pavement, and to link and to stiffen loadbearing foundations. The latter is the function of the conspicuously massive wall that joined the foundations on either side of the arch between the main nave and the transept (fig. 154)[3]. It ran through the mausolea V and L, and is best seen in cross-section at mausoleum L where it has been cut away to create a modern passage to the area around the *tropaion*. Its profile is irregular, but the wall is approximately 2.80 m. at its base and it rises with a slight batter for *ca.* 1.50 m. with a facing of tufa *incertum*. The tufa lining stops at that point and the wall continues unfaced to a terminus below the Constantinian paving. It is 2.25 m. thick at that point. The upper part of the wall must have required shuttering as the entire fabric, excepting the tufa lining at the bottom, is composed of many large fragments of marble with fewer pieces of tufa and travertine set in a dark, reddish-brown pozzolana. This crude but imposing masonry resembles that found almost ubiquitously in the foundation of the Lateran Basilica[4]. In view of its pervasiveness at the Lateran, one asks why it is limited to so specific an area in St. Peter's. Our hypothesis is that the decision to link the foundations of the northern and southern arms of the east wall of the transept was taken *ad hoc* after construction had begun. This type of masonry is obviously more quickly constructed than are the carefully laid *opus testaceum* and *opus listatum* found in the nave foundations. Since the Lateran Basilica lacked a transept, it did not present quite the same structural problem as that posed at St. Peter's; but its western foundation



(R. F. S. P.)

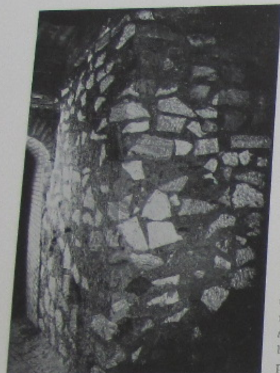
Fig. 153. St. Peter's. Constantinian basilica, foundation wall of the nave colonnade, south.

[1] *Esplorazioni*, I, 150.

[2] *Esplorazioni*, I, fig. 106 (our fig. 151).

[3] *Esplorazioni*, I, 153.

[4] Above, 34 ff. and figs. 17 to 20.



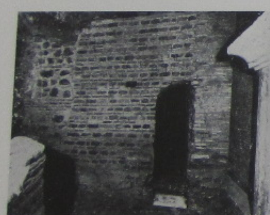
(R. F. S. P.)

Fig. 154. St. Peter's. Constantinian basilica, section of span wall below triumphal arch, looking southeast toward mausoleum V.

wall was continued uninterruptedly across the chord of the apse as a tie wall. Due to the presence of the *tropaion* at the corresponding point in St. Peter's, this safety factor could not be constructed there. The rubble tie wall below the eastern arch may have been the builders' response to this problem.

A number of Constantinian walls were thrown across mausolea and passageways in the Vatican necropolis (figs. 149, 155). Much thinner than the bearing walls, they average 60 cm. in thickness and are constructed of an *opus listatum* far cruder and more casually built than that encountered in the southern foundations of the nave [1]. The number of courses of *tufelli* are greater in proportion to those of brick, and the *tufelli* themselves are more irregular in contour. The mortar beds are thicker and play a more predominant role in accommodating the less precise masonry units. This Constantinian *opus listatum* is noticeably less regular and less finely built than that found in the construction and pre-Constantinian renovations of the mausolea.

The inner face of the foundations of the apse at its southern corner can be observed in the excavated zone beneath the Grotte [2]. They cut through the façade of mausoleum R and are visible for a breadth of 1.50 m. and for a depth of 2.10 m. The outer face is unexcavated, and its total width is thus unknown. The foundations project approximately 90 cm. beyond the inner face of the rising wall. If the projections are symmetrical with respect to the wall above, the foundation would be over 3.50 m. thick, and, therefore, the heaviest yet encountered in the basilica. It also departs from the other load-bearing foundations in its construction, which is an unfaced rubble conglomerate of marble and tufa [3]. It is related to the tie wall at the triumphal arch, but its masonry elements are smaller.

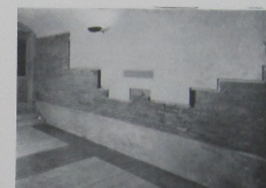


(R. F. S. P.)

Fig. 155. St. Peter's. Vatican necropolis, sustaining wall in mausoleum F.

[1] *Esplorazioni*, I, 153.
[2] *Ibid.*, 155 f.
[3] *Ibid.*, 156.

The foundations of the west wall of the north transept are now invisible except for a short stretch of the east face engulfed in the western wall of the Cappella di S. Columba (fig. 156) and an even shorter tract at the transept's junction with the northern exedra. The Vatican excavators saw more extensive areas (fig. 157) [1]. These were faced solely in brick, like those at the lowest level of the southern nave colonnade support [2]. The foundation of the northern arm of the western wall of the transept at its junction with the apse follows an unusual plan. It is lined internally with a crude brick masonry that extends from the foundation projection to 60 cm. below the Constantinian paving and follows a raking line running from 1.50 m. at the opening of the apse to 1.20 m. at a point 2 m. to the north (fig. 157). It then runs more nearly parallel to the transept wall and finally dies against the foundation proper, although its exact



(R. F. S. P.)

Fig. 156. St. Peter's. Constantinian basilica, north transept, west wall and Cappella di S. Columba.



(R. F. S. P.)

Fig. 157. St. Peter's. Constantinian transept, north arm, west wall, near springing of apse.

configuration is difficult to follow from the excavation report. Apparently this masonry lining was the result of an *ad hoc* decision to reinforce the critical point at the foot of the arch of the apse. The excavation report does not mention the nature of the foundation at the corresponding point to the south of the apse opening. At a point some 5 m. north of the opening to the apse the brick lining seems to have disappeared and the foundation projection is a mere 85 cm. If symmetry prevailed, the foundation would at that point be 3.35 m. thick. The northern face of the foundation of the columnar screen separating the transept from its northern exedra is seen at its junction with the western wall of the transept. The projection varies slightly but it is 57 cm. at the corner proper. A symmetrical restoration would produce a width of *ca.* 2.40 m.

At the corresponding southern arm of the western wall of the transept the eastern face of the foundation can be seen for a stretch of 3.49 m. in the wall of the Cappella delle Partorienti (fig. 158). The Vatican excavators were able to see even more in the direction of the apse now concealed under plaster in the Cappella della Bocciata (fig. 159) [3]. The exposed face is surfaced, like that at the north, wholly in brick. The Vatican excavators assumed, plausibly, that the exterior face was of the same material. The foundation projected only

[1] *Esplorazioni*, 156.
[2] *Ibid.*
[3] *Ibid.* I, 157



(R. F. S. P.)

Fig. 158. St. Peter's. Constantinian transept, south arm, foundation wall and, above setback, rising wall.



(R. F. S. P.)

Fig. 159. St. Peter's. Constantinian south transept, rising wall.

30 cm. from the wall it supported. Again if symmetry prevailed, its total thickness would be 2.30 m. Why the foundation below the southern arm, which had to descend to a lower level for bearing, was thinner than at the north is unknown.

In summary, it appears from an inspection of the preserved fabric that materials selected for the Constantinian foundations were in most cases chosen with regard to the anticipated loading and to the expected stresses to which they might be subjected. The selection of their widths, however, does not appear to have followed this rational procedure so clearly. Likewise, an insufficient sampling is preserved to form a firm opinion in this respect. It is unfortunate that nothing is known about the details of the foundations at the southeast corner of the basilica which stood in the sump that later gave so much trouble to Maderno in constructing the façade of the new church and brought Bernini to grief in the building of his ill-fated southern campanile. In the absence of archaeological evidence from this area, the testimony of Giacomo Grimaldi assumes considerable importance, and this will be considered in the analysis of literary descriptions [1]. There is, however, nothing in early commentaries or graphic sources concerning the perilous state of the nave walls to suggest that the condition existing in the sixteenth century was the result of insufficient or faulty foundations.

b. Superstructure

The rising walls of the basilica are preserved and have been observed to modest heights, never more than 3 m.: at the apse, and the adjacent northern and southern arms of the transept; at the western piers corresponding to the columnar screens of the exedrae at either end of the transept; at the northwestern corner of the northern exedra; and at the northern wall of the nave at its junction with the sixteenth century *muro divisorio*. The last of these, 1.50 m. thick, can be observed only in cross-section and for approximately 1 m. on its inner and outer

[1] Below, 213.

faces [1]. It is faced with brick on both sides (fig. 160). One levelling course of bipedales can be seen to run through the wall. Additional details are difficult to determine due to the heavy picking on the outer face of the wall and in the section cut through the wall. The inner face is covered with a thin but dense coat of plaster. No decoration is visible today.

The apse and transept walls are likewise faced in brick [2]. The outer surface of part of the northern arm of the western transept wall is reported to be covered with a heavy coat of waterproof plaster. It is possible that this *opus signinum* is Constantinian [3]. Alternatively, its application might be linked to Damasus' attempts to control the problem of ground water, documented by inscription [4]. Elsewhere, surprisingly, not a trace of decoration or plaster can be found adhering to Constantinian masonry, except for the small area mentioned above.



(R. F. S. P.)

Fig. 160. St. Peter's. Constantinian basilica, wall of north aisle near *muro divisorio* and drainage gutter.

The Constantinian wall of the apse survives to a height of between 2.50 m. and 3.00 m. in the inner wall of the semicircular corridor of the Confessio (figs. 161a, b) [5]. Its outer face is concealed beneath modern plaster applied after the Vatican excavations. The inner face is buried behind the 34 cm. thick lining applied, presumably under Gregory the Great,



(R. F. S. P.) (R. F. S. P.)

Fig. 161a. St. Peter's. Constantinian basilica, apse wall uncovered behind lining wall of annular crypt, and b. Detail.

[1] *Esplorazioni*, I, 155 f.
[2] *Ibid.*, 155, 157.
[3] *Ibid.*, 156.
[4] Above, 172, dig. 366-385.
[5] *Esplorazioni*, I, 155.

to support the pavement of the raised presbytery. But the excavators observed it and recorded its thickness as 1.72 m. and its modulus of five courses of brick and mortar as 29 to 30 cm.

The recorded thickness of the transept wall immediately to the north is 1.70 m. and its modulus of five courses of brick and mortar, presently measureable, is 30 to 31 cm. [1]. The mortar beds vary from 25 to 31 mm. The excavators found this wall to have been pierced by a door some 7 m. from the apse opening. Its sill and jambs are not preserved. Only the inner face of the wall and the opening are now visible, their depth being concealed by the wall of the new Cappella di S. Columba. Details of the opening, therefore, cannot be verified. The excavators reported the opening's width as 2.40 m. The preserved wall continues in the unfinished and partly unexcavated area north of the chapel.

Exploration in that area has revealed the beginning of the columnar screen separating the transept from its northern exedra (fig. 162). Its western pier is preserved to a height of approximately 50 cm. It, too, is brick-faced and built integrally with the transept wall, although it is only 1.28 m. thick. The base of the western column of the screen survives *in situ* 3.67 m. east of the eastern face of the pier (figs. 175, 176, 177). A 32 cm. deep marble slab which may be associated with the basilica's pavement is set in an 8 cm. mortar bed on the foundation that runs as a tie wall across the transept at this point. The slab is not rectangular but has a projection 10 cm. long, from approximately its center on the north side that disappears into the unexcavated scarp. The block appears for this reason to be a spoil as is the base it still supports. The latter will be discussed below.

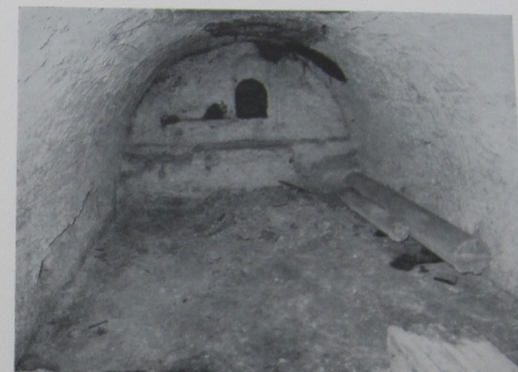


(R. F. S. P.)

Fig. 162. St. Peter's. Constantinian basilica, north transept, west wall, pier at junction of north exedra.

A large pit, dug in the sixteenth century for the slaking of lime for the mortar used in the new construction, occupies the area of the northwestern one-third of the northern exedra (fig. 163). It is accessible through a small opening dug at the northern pier of the columnar screen. The western wall of the exedra is lined with masonry to receive the vault installed when the pit was closed. The inner face of the exedra's northern wall, however, can be observed, although its surface is covered by the residue from the slaking pit (fig. 164). The clear depth of the exedra is 10.76 m., just over 48 *palmi* and thus 4 *palmi* in excess of the 44 recorded by Alfarano. The foundation projection below the wall is 71 cm. The northern wall has been breached by a small hole, presumably made by the Vatican excavators, revealing it to have a thickness of 1.50 m., equal to that of the northern wall of the nave. The marble threshold of a door, formed of two blocks having a total width of 1.77 m., is visible at 1.03 m. east of the northwestern corner

[1] *Esplorazioni*, I, 156.



(R. F. S. P.)

Fig. 163. St. Peter's. Constantinian basilica, north exedra, vaulted lime slaking pit, north wall of exedra in background, to the right, column shafts.



(R. F. S. P.)

Fig. 164. St. Peter's. Constantinian basilica, north exedra, north wall, to the left, door sill.

(fig. 164, left) [1]. Its jambs are not preserved, and the condition of the wall surface is such that the approximate date of the closing of the door cannot be determined. This door is not mentioned in any previous literature.

Less of the western wall in the southern transept wing is visible than of its foundation, but a stretch extending some 7.12 m. from its junction with the southern screen pier can be studied. The opening of a door is seen 3.30 m. from the re-entrant corner (fig. 165). Its width is mistakenly given by the excavation report as 2.12 m. [2]. Its clear width is, in fact, 2.40 m. Its original frame is not *in situ*. After construction, possibly

[1] This is the site, according to ALFARANO, 31, plan, 32, of the altar of St. John the Evangelist established by Symmachus.
[2] *Esplorazioni*, I, 138.



(B. F. S. P.)

Fig. 165. St. Peter's. Constantinian basilica, south transept, door in west wall.



(Esplorazioni)

Fig. 166. St. Peter's. Constantinian basilica, south transept, door in west wall, north jamb.

centuries later, the door was reduced in width. Roughly laid brickwork 57 cm. thick was set against the inner face of the original opening for a width of 26 cm. at the left and 24 cm. at the right. A fragment of an ancient, reused marble jamb, 18 cm. thick, survives at the right, set over an apparently reused marble threshold (fig. 166). If the marble is part of the original door frame it is unquestionably not in its original position, as the excavation report states. Assuming symmetry, the reduced door opening would have been 1.54 m. The construction of a modern sustaining wall across the opening of the original door prevents the measurement of the transept wall's thickness at this point. The northern face of the projecting pier of the southern columnar screen is hidden by the remains of the masonry of a chapel, presumably the tomb





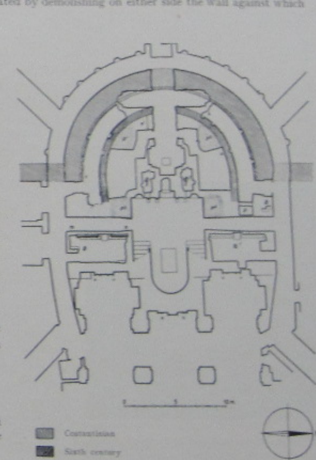
(B. F. S. P.)

Fig. 167a. St. Peter's Constantinian basilica, south transept, west wall, pier at junction of south exedra, and b., detail.

chapel of Pope Hadrian I, installed in the corner (figs. 167a and b)[1]. Excavation was carried sufficiently southward to reveal the thickness of the pier which, at 1.28 m., is identical with that at the transept's northern end. No more standing walls of the basilica have come to light.

c. Isolated elements

From all points of view the most important discovery concerning the Constantinian basilica made by the Vatican excavators was that of the remains of the fourth century treatment of the *tropaion* of the Apostle and its setting in and immediately in front of the apse. They are visible inside two irregular-shaped chambers on either side of the eastern arm of the Cappella Clementina where it joins the cross-shaped confessio-chamber (fig. 168, q-q[1]). Understandably, this discovery has received the most detailed account in the excavation report and has been extensively reviewed in Toynbee and Ward Perkins' volume to which the reader is referred (fig. 168)[2]. Constantine's architects isolated the wall, and the aedicula that marked the pre-Constantinian form of the *tropaion*. Along its north-south axis the chord of the apse of the church was established and was isolated by demolishing on either side the wall against which it had been built. The residual masonry, roughly regularized with new masonry, was sheathed in revetment. The result was something resembling a marble-revetted cupboard. Its *pavonazetto* base on the northern and southern sides was discovered, as was the revetment on the western face. This comprised two *pavonazetto* slabs framed with porphyry pilaster strips. The quadrilateral monument measured some 2.90 m. from north to south and 1.80 m. from east to west. Subsequent alterations and the presence of later construction above it deprive us of the height of the original shrine, but it rose 2.75 m. above the pavement of the basilica. The shrine, however, was not set directly on that pavement, but was surrounded by a raised marble platform some 16 cm. high. The two western corners



(Esplorazioni)

Fig. 168. St. Peter's. Plan of present *confessio*, showing Constantinian apse and sixth century annular crypt.

[1] Alfarano, 41 f., plan, 15.
[2] *Esplorazioni*, I, 161 ff.; Toynbee-Ward Perkins, 201 ff.



(R. F. S. P.)

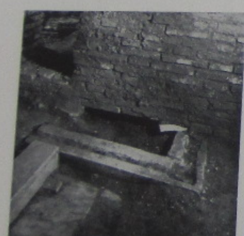
Fig. 169. St. Peter's. Constantinian basilica, raised platform of Constantinian shrine, looking northeast, across setting of northwest vine column.



(R. F. S. P.)

Fig. 170. St. Peter's. Constantinian basilica, raised platform of Constantinian shrine, looking southeast.

of the platform were discovered and are visible in small chambers to the north and south of the altar of the Confessio in the Cappella Clementina[1] (figs. 168 outside q, q[1]; 169, 170). These are formed of large slabs of white marble; that to the north is over 1.35 m. by 1.65 m., and that to the south, 1.48 m. by more than 1.78 m. The scamillus for the setting of a square base is clearly seen on each block. These have been correctly interpreted as the settings for the pedestals of the two western vine scroll columns of the Constantinian baldacchino over the shrine (fig. 226). The blocks exhibit cuttings running east and west for the insertion of parapet slabs. That to the north was badly damaged when its parapet slab was subsequently removed. The enclosure was found to project just over 1 m. to the west of the west face of the shrine. The evidence for this is seen in narrow base blocks slotted for the insertion of parapet slabs and posts of which the northwestern corner and the south arm of the southwestern corner are preserved (fig. 171). There are extensive remains of a later paving set some 7 cm. above the platform at its southern edge (fig. 169). It consists of marble slabs and squarish flags — white, *pavonazetto*, *cipollino*, and *grigio* — set irregularly. It documents a raising of the level of the pavement immediately outside the enclosure around the shrine before the pontificate of Gregory the Great, 590-604, when presumably the entire presbytery was raised. This may have occurred at the same time that the area within the enclosure was refaced; an event documented by the discovery of the epitaph of a magistrate of Vienne who died in 407. The epitaph, inscribed on a marble slab, lay face down on the raised platform at the northwestern corner of the enclosure[2].



(R. F. S. P.)

Fig. 171. St. Peter's. Footing of enclosure of Constantinian monument, northeast corner, prior to full excavation.

[1] *Esplorazioni*, 167.
[2] *Ibid.*, 172.

Within the ambit of the Constantinian apse, sizable traces are preserved of a thorough remodelling the area underwent at the end of the sixth century[1]. At that time, the apse floor was raised 1.45 m. above the original Constantinian pavement, thus creating a new presbytery zone (figs. 227, 228). (The ensuing demolition of the Constantinian shrine and screen, and its rearrangement will be discussed later). The new apse level is marked by the base line of the altar of Callixtus II (1119-1124), which in turn, on the same level, encloses the sixth century altar (fig. 225). The former can be seen from below inside the crypt; the latter is no longer visible, but it was surveyed by the excavators[2]. Below the raised apse level are preserved the remains of the annular crypt corridor, built concomitantly with that new level (figs. 168, 228). The pavement, the setting of the ceiling and both the inward and outward walls of the crypt are visible in large parts inside two curved rooms, accessible from the ends of the semicircular corridor of Clement VIII, that follows the outside perimeter of Constantine's apse. The inward wall is preserved, too, in sizable stretches inside the irregular-shaped chambers where the remains of the *tropaion* and the Constantinian shrine platform also survive. The pavement of the crypt corridor lies 0.64 m. below the Constantinian level and consists of irregularly shaped flagstones. The inward wall consists of a 34 cm. lining of the interior face of the Constantinian apse (fig. 168), the re-entry at the top serving to set the stone plaques of a ceiling which at the same time formed the floor of the raised presbytery (figs. 161a, b; 228). The distance from the floor to this upper setting line and hence the height of the crypt corridor is 2.08 m. The masonry of the lining consists of bricks with the occasional appearance of tufa. The thickness of the reused bricks varies from 2.9 to 3.5 cm. and the mortar beds from 2.8 to 3.5 cm., with the majority of the bricks and mortar beds being closer to 3.5 cm. The latter have a characteristically flat, smooth profile sloping inward from top to bottom that sets them off from Constantinian mortar jointure. Lamp niches are set into the thickness of the lining.

The inward wall of the crypt stands at a distance of 1.60 m. from the outward wall, thus giving the width of the corridor. It, too, contains lamp niches, but the masonry has nowhere been exposed.

A last element to be discussed in the area of and pertaining to the lay-out of the crypt — whether dating from the late sixth or after the seventh century — is an altar block enclosed in the present sixteenth century altar inside the cross-shaped chapel behind the Pallia niche, the rear of the old *tropaion*[3]. Built of brick fragments, in second use and laid in irregular courses, it contains on its front, a relic-box facing east, towards the Pallia niche. The excavation report, because of the poor building technique, assigns it a date after the seventh century; but we are not sure whether in an object without any bearing function the masonry in itself justifies a late date.

Portions of the eastern facing of the raised presbytery were also discovered in the excavations. These are found in two low, unused chambers immediately east of the ramping passageways, joining the sixteenth century semicircular corridor outside the Constantinian apse with the open *confessio* in front of the niche of the Pallia and the Pontifical High Altar of the new church (fig. 168 at B, B[1])[4]. Stretches of early paving are seen in each of these chambers. The level appears to be somewhat above that of the Constantinian pavement and is perhaps to be associated with the raised stratum observed at the western edge of the Constantinian shrine platform and in the epitaph of the magistrate of Vienne. The pavement is similarly composed of a mixture of large slabs and small, squarish flags, all obviously reused.

[1] Below, 259 ff.
[2] *Esplorazioni*, I, 188 f.
[3] *Ibid.*, 178 ff.
[4] *Ibid.*, 172.



(R. F. S. P.)

Fig. 172. St. Peter's. Constantinian basilica, east face of Gregorian raised presbytery at Constantinian pavement level, south stretch: pedestal of vine column, flanked by later parapet supports.



(R. F. S. P.)

Fig. 173. St. Peter's. Constantinian basilica, east face of Gregorian exedra presbytery at Constantinian pavement level, north stretch: pedestal of vine column, flanked by later parapet supports.



(R. F. S. P.)

Fig. 174. St. Peter's. Constantinian basilica, raised presbytery, south face, imprint of later parapet slab in secondary use.

In neither of these chambers is the actual structure of the wall of the raised presbytery to be seen[1]. One sees in the southern chamber a single moulded pedestal measuring 78 cm. at its upper surface and 59 cm. in height. It sits on a roughly picked marble plinth 19 cm. high which rests on the pavement described above (fig. 172). It is flanked on either side by reused marble architectural members roughly cut to fit the base moulding of the pedestal. The member to the north sits on the pavement, that to the south on an intermediate member like that below the pedestal. The upper surface of both is 43 cm. above the pavement. These once supported stone parapet slabs set close to their forward planes. The slabs were subsequently removed, but their imprints have been left in their original mortar backings. That to the south (fig. 172) is smooth, with the exception of the impression of two clamp cuttings that presumably belonged to the rear surface of the parapet slab. That to the north, however, is an excellent impression, where it is preserved, of a relief whose lower border is formed of three fillets and whose field is decorated with an alternation of spirally-fluted colonnettes, framing schematised date palms (fig. 174).

No one has doubted that the pedestal supported the second from the left of the six marble vine scroll columns of the Constantinian presbytery's fittings, relocated at the time of the raising of the presbytery to stand below and in front of its eastern face (fig. 227). Its dimensions accord with those of the setting surfaces found on the Constantinian platform at the shrine, and its profiles are comparable to those of inscribed and dated bases of the first half of the fourth century[2]. The installation of the marble members reused as bases for the parapet slabs, the slabs themselves and the lining against which they are set must therefore represent a redecoration of the face of the raised presbytery. There is no objective evidence as to when this was done. Perhaps it is to be associated with the installation of an additional row of six columns presented to Pope Gregory III (734-741) by the Exarch of Ravenna[3].

[1] *Esplorazioni*, I, 184 f.
[2] *Ibid.*, 167 and 184.
[3] Above 175, dig. 731-741.



(R. F. S. P.)

Fig. 175. St. Peter's. Constantinian basilica, north exedra screen, base of west column seen from northwest.



(R. F. S. P.)

Fig. 176. St. Peter's. Constantinian basilica, north exedra screen, base of west column, seen from southwest.

In the corresponding chamber to the north, in addition to the paving, one sees the pedestal of the fifth column (fig. 173) and the southern edge of the pedestal of the sixth column, which is largely buried in the wall of the sixteenth century corridor of the *confessio*. The base of the fifth pedestal appears to have been cut at a slight angle to fit it to the sloping surface of the marble base on which it is placed. As in the southern chamber, the base is flanked by reused marble architectural members. That linking the two preserved pedestals, apparently a fragment of an epistyle, is inscribed ORNATVM PETRONIVS MX[1]. This Petronius has been identified with Petronius Maximus, emperor in the West in 455. Nothing more is preserved of the early facing of the raised presbytery in this chamber. The rubble masonry seen on and behind the marble members is that of the late sixteenth century.



(R. F. S. P.)

Fig. 177. St. Peter's. Constantinian basilica, north exedra screen, base of west column, seen from north.

The following isolated elements of the old basilica have been observed in the area of the northern arm of the transept and its exedra.

The base of the western column of the screen between the transept and the exedra remains in place (figs. 175-177; see also pl. VII, B). The L-shaped marble slab on which it sits has been described above. This slab supports a marble plinth which, judging from its profile, appears originally to have been the crown or base of a pedestal. The well-preserved white marble base itself is of the Roman Ionic double scotia form[2]. Since one quarter of the base remains unexcavated its entire upper surface cannot be studied. The visible surface exhibits three

[1] Erroneously recorded as ORNATUM PETRONIUS MAX(imus) in *Esplorazioni*, I, 185; TOYNBEE-WARD PERKINS, 235.
[2] SHOE MERRITT, « The Geographical Distribution of Greek and Roman Bases », *Hesperia* XXXVIII (1969), 188-204, esp. 194 f.; STRONG-WARD PERKINS, « The Temple of Castor in the Forum Romanum », *P.B.R.S.* XXX, (1962), 5-12, esp. 7.

dowel holes and their pour channels. The hole in the center appears to have been the base's original technical feature. The other two, close to the perimeter of the base, are probably the work of Constantinian stone cutters. A third dowel hole which, with the previous two may have formed an equilateral triangle, is probably to be sought within the unexcavated area. Such was the method of the Constantinian attachment of the column base and the lower surface of the column shaft documented in the columns found nearby.



(R. F. S. P.)

Fig. 178. St. Peter's. Constantinian basilica, north transept, columns in northwest corner.

Five columns were discovered by the Vatican excavators aligned against the western wall of the transept near the projecting pier [1]. Two of these were removed to the lime pit under the pavement of the basilica at the termination of the excavation (fig. 163). This was done in order to erect a new supporting wall for the transept paving. Both columns are of white marble. The larger one is 4.665 m. long and has a base diameter of 62 cm. The second column is 2.93 m. long and its base diameter is 39 cm. It is clearly too short to have served as a structural member of the old church. The three columns remaining on the floor level of the transept are of gray granite (fig. 178). The only one whose length can be measured is 6.82 m. long. It has a

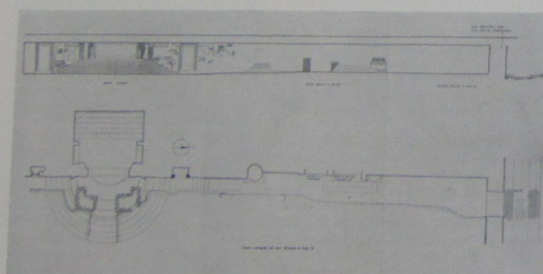


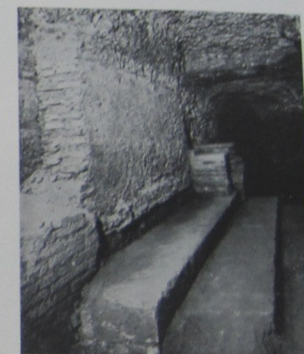
Fig. 179. St. Peter's. *Muro divisorio*, plan and elevation. (Esplorazioni)

[1] *Esplorazioni*, I, 156.

base diameter of 97 cm. and a lower shaft diameter of 84.5 cm. Only the upper surfaces of the other columns can be measured. These are 87 and 82 cm. in diameter.

Proceeding southward from the north wall of the Constantinian north aisle previously described (fig. 160), the excavators dug along the eastern face of the *muro divisorio* (figs. 179, 180)[1]. They encountered the pedestal and base of the eleventh column of the arcade dividing the two outer aisles, counting from the eastern wall of the nave, and the base of the eleventh column of the nave colonnade. Both had been half immured in the *muro divisorio* in 1538 with the columns they supported. The latter were removed in 1606, but they have left their imprint on the surviving stretch of the *muro divisorio*. Work could not be extended across the entire nave, but it was pushed sufficiently far south to reveal the central door in the *muro divisorio*.

The elements discovered of the outer column setting comprise a roughly picked pedestal in its original position supporting a marble base (figs. 181a, b; pl. VII A). Like that at the northern exedra (pl. VII B) it is of Roman Ionic double scotia form. The northern face of the pedestal is, by our measurements, 8.66 m. south of the plastered face of the outer wall. The pedestal is composed of two marble blocks of almost identical width set side by side with their vertical joint running east-west. The pedestal is 1.09 m. wide at its shaft and it is 64.5 cm. high; it rests on a mortar base comparable to that under the footing slab at the transept column. The steps leading to the Chapel of Gregory XIII partially envelop the pedestal's base, obscuring traces of Constantinian paving which must have risen against the pedestal above the mortar. The picking that characterizes the surface of the shaft of the pedestal appears, at least on its northern face, to have been original and to have constituted a kind of crudely drafted margin framing a lightly rusticated panel. Additional picking, especially on the eastern face, may conceivably be related to the plastering and decoration of the *muro divisorio*[2]. The pedestal's mouldings are restricted to a simple double fillet at the crown. The pedestal is probably Constantinian in origin. The plinth of the column base above it is carved in the same block as the base.



(R. F. S. P.)

Fig. 180. St. Peter's. *Muro divisorio* of Paul III, with steps leading to north wall and, in background, base and pedestal of eleventh column, north aisle.

[1] *Esplorazioni*, I, 159 f.

[2] The base stood between the entrance to the Chapel of Gregory XIII to the south and the tomb of Innocent IX to the north, according to GRIMALDI, *Descrizione*, 116 v, whose illustration shows no decoration at that point. Remains of frescoed architectural decoration are clearly visible on the surviving plaster of the *muro divisorio* to the south of the pedestal, where Grimaldi likewise shows no decoration. Perhaps the entire wall was decorated.



(R. F. S. P.)



(R. F. S. P.)

Fig. 181. St. Peter's. *Muro divisorio*, Constantinian north aisle, eleventh column, pedestal and base a) from southeast and b) from northeast.



(R. F. S. P.)

Fig. 182. St. Peter's. *Muro divisorio*, Constantinian north aisle, eleventh column, inscription on plinth.

The characters M and X are inscribed at the center of its eastern face (fig. 182). Since the base is the twelfth, counting from the transept end of the nave, it is tempting to interpret the "M", the twelfth letter of the Roman alphabet, as the designation of the base in the file of columns. The "X" might refer to the file of columns to which the base belonged. The moulded profile of the base, although generally well preserved, is more chipped than the similar but larger base at the northern exedra of the transept. There are small crumbs of mortar or plaster adhering sporadically to the moulded surface. The scamillus of the upper surface of the base exhibits abundant traces of a thin, fine coat of plaster (fig. 183). There are three dowel holes and pour channels cut into this surface. The central hole was probably that cut for the original use of the base, and the lateral holes, close to the perimeter of the base, are likely to have been those cut by Constantinian workmen.

Two more fragments of the old church may be observed along the course of the *muro divisorio*. A fragment of Constantinian masonry, presumably fallen from the clerestory of the main nave, is to be seen in the eastern scarp of the trench along the *muro divisorio*, between the base of the nave column and the sixteenth century door (figs. 184a, b)[1]. Not enough is visible to permit its thickness to be measured. It is constructed solidly of brick without a core of *opus caementicium*.



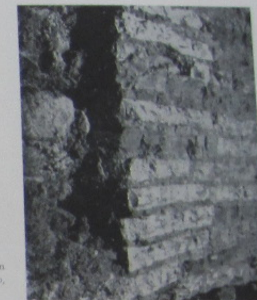
(R. F. S. P.)

Fig. 183. St. Peter's. *Muro divisorio*, Constantinian north aisle, eleventh column, base, detail.

[1] Its position appears in *Esplorazioni*, II, pl. CIX.



(R. F. S. P.)



(R. F. S. P.)

Fig. 184. St. Peter's. a) Constantinian brickwork fallen from superstructure, now in scarp at *muro divisorio*, and b) detail of same.

No plaster is seen on the exposed surface. Two fragments of a marble Corinthian capital, now in fallen position, are also to be seen between the nave column base and the aisle column pedestal (fig. 185). They are a fragment of a corner volute and the central part of the abacus including its flower. The carving is mediocre and the capital is perhaps to be assigned to the later second century or even the early third century. The fragments are too small to permit the attribution of the capital to the nave colonnade or the side arcade with any certainty.

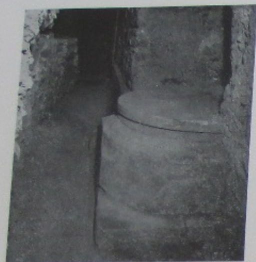


(R. F. S. P.)

Fig. 185. St. Peter's. Fragment of Corinthian capital, now at *muro divisorio*.

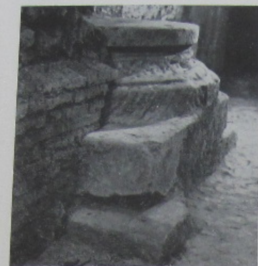
The southern face of the pedestal of the northern aisle arcade is 8.44 m. distant from the northern face of the plinth of the eleventh column of the nave colonnade. The base of this nave column presents a sorry sight today (figs. 186, 187, 188). Its plinth has been cut away at the northeastern corner and its moulded profile, like those of the Constantinian pedestals of the vine scroll columns, is much worn by the pious traffic of the centuries. The surface has been deliberately picked[1]. The base rests on a marble slab whose single completely visible face measures 1.80 m. Its total depth cannot be measured. The plinth is 1.61 m. long and is equal to the lower diameter of the column base. The base, which is 35.2 cm. high, does not conform to any commonly known type of Roman base. Its profile is characterized from top to bottom by a fillet, an astragal, a singularly flaccid cyma reversa,

[1] Both the degree of wear on the corners of the plinth and the curious picking on the base are paralleled by the wear and picking found on the bases of the vine scroll columns of the old chancel. The wear may be easily explained by the centuries-long press of the faithful in the basilica, but the picking in both instances is more difficult to explain. Could the worn bases have been restored in stucco at some time?



(R. F. S. P.)

Fig. 186. St. Peter's. Constantinian basilica, north nave colonnade, eleventh column, base and plinth, from north.



(R. F. S. P.)

Fig. 187. St. Peter's. Constantinian basilica, north nave colonnade, eleventh column, base and plinth from southeast.



(R. F. S. P.)

Fig. 188. St. Peter's. Constantinian basilica, north nave colonnade, eleventh column, base and plinth, detail.



(R. F. S. P.)

Fig. 189. St. Peter's. Constantinian basilica, north nave colonnade, eleventh column, base and plinth, upper surface.

and by a heavy fillet whose upper edge has been softened by a rounded profile. Its somewhat barbarous quality suggests that it may be of Constantinian manufacture and that it represents a reduced version of the classical Attic base in which the cyma reversa replaced the scotia and lower torus and the lower fillet took the place of the normal plinth. That it was made for its present location is further suggested by the technical features of its upper setting surface (fig. 189). There is a cutting in its center, but its unusual form and the absence of a pour channel to it indicates that it was not intended for a central dowel but was perhaps meant to accommodate either a lifting device or for twisting the base on its plinth. It is cruciform in

shape. The vertical arm is 9 by 14 cm. and 15 cm. deep. The right cross arm is 6 by 5 cm. and is 9.5 cm. deep. The left is 7 by 6 cm. and is likewise 9.5 cm. deep. There are two sets of dowel holes, both probably Constantinian, opposite one another near the perimeter of the base. There is one hole on the northern side and two, linked by a common pour channel, on the southern side. The latter may represent an error in cutting.



(R. F. S. P.)

Fig. 190. St. Peter's. Fourth century base 1 from Constantinian basilica, placed on foundation wall separating south aisles.

Two additional bases of columns from the southern arcade of the nave are preserved and exhibited in Hall II of the enlarged Grotte Vecchie where they have been placed on the Constantinian foundation (figs. 190, 191, 192; pl. VII, C, D). The places and the circumstances of their discovery cannot be determined. Both are cut from limestone or extremely dense travertine. Judging from the crudeness of their carving and their insensitive profiles, they are probably of Constantinian origin. The profiles of each, reading from top to bottom, comprise a slightly convex fillet, a normal fillet, a shallow scotia, another fillet and what might be described as



(R. F. S. P.)

Fig. 191. St. Peter's. Fourth century base 1 from Constantinian basilica, another view.



(R. F. S. P.)

Fig. 192. St. Peter's. Fourth century base 2 from Constantinian basilica.

the upper half of a torus. They differ slightly in profile, most notably in the curvature of the scotias. But each appears to represent a coarsened or ill-understood version of an Attic base, earlier so well-documented in Rome.

This concludes the review of the archaeological evidence for the form and character of the Constantinian basilica. Meager as it is, the evidence permits certain general conclusions. Despite their diversity, the foundations appear to be the most carefully built of all those known in Roman churches of the Constantinian period and those which show the greatest concern for appearance. Moreover, the rising walls, uniformly faced in brick, seem to occupy a similar position with respect to their early fourth century counterparts. Insufficient areas of the basilica's external surfaces have been preserved to allow for an opinion as to whether or not the building was originally stuccoed. The absence of plaster on most of the inner walls observed is a surpris-

ing negative aspect of this survey. The survival of a thin coat of plaster at the center of the northern wall warns against the drawing of hasty conclusions concerning early finish and decoration. The eccentric placement of the doors in the western wall of the transept suggests that they were purely functional and did not form a part of the artistic order of the structure comparable to the five symmetrically placed portals in the eastern façade, known from literary and graphic sources. The single most important contribution of the preserved fabric to our knowledge of the building is unquestionably the dimensions it offers, especially for the width of the nave and the transept, as a control for the more extensive collection of dimensions provided by sixteenth century graphic and literary sources. It is apparent that without the latter this entry in the *Corpus* would be in inverse proportion to the size and importance of Old St. Peter's among the Christian basilicas of Rome.

2. Literary evidence

The earliest written evidence available for envisaging the Constantinian basilica and the changes wrought up to and through Carolingian times are the records of imperial and papal building activity contained in the *Liber Pontificalis* or implied in contemporary inscriptions, now lost, but transmitted, often together with the original sites, through early *syllogai*. This evidence we have compiled in section C. DATES [1] and intend to use in section F. RECONSTRUCTION [2]. The majority of these early records are brief, scattered and at best they hint, often obliquely, at the plan and design of the buildings. Thus, they need to be interpreted and used with caution.

The oldest full-scale descriptions of St. Peter's date from the twelfth century, as witness PETRUS MALLIUS, *Historia Basilicae antiquae S. Petri Apostoli in Vaticano*, composed between 1159 and 1181 [3] and re-edited after 1192 by one ROMANUS, like MALLIUS, a canon of the basilica [4]. The aim of these writings was polemical: in answer to JOHANNES DIACONUS, *Descriptio Lateranensis Ecclesiae*, likewise re-edited 1159-1181, St. Peter's is exalted as outranking the Lateran [5]. Hence the author focusses on the age of the church, its relics and altars, on the tombs of the popes it shelters and their epitaphs, on papal and imperial donations, and on the prerogatives of its clergy. The plan and elevation of the building are not discussed; individual features are barely mentioned, or only in passing. The same holds of MAFFEO VEGIO *De rebus antiquis memorabilibus Basilicae S. Petri Romae*, 1455-1457 [6]: he copied the building inscriptions to prove the Constantinian origin of the basilica; and, while he transmitted, good humanist that he was, the inscriptions in verse of Damasus' acqueduct and of the Probus mausoleum and noted the cemetery, including a *columbarium* found west of the church, he wrote not a word about the structure of the basilica. Indeed, prior to the late sixteenth century, when Constantine's building was half-demolished, only occasional remarks scattered in unrelated contexts provide information on the basilica: Gregory of Tours' note regarding the number of one hundred columns, of which four, expressly excluding those over the shrine, were in the transept, meaning those in the exedra screens [7]; his description of shrine and altar superimposed and

[1] Above, 170 ff.
[2] Below, 239 ff.
[3] Ed. by JANNINGS, S. J., *AA. SS. Junii*, VII, Supplementum, II, Antwerp, 1717, 32*; we are using the reprint, Paris, 1867.
[4] *Basilicae Veteris Vaticanae Descriptio auctore Romano eiusdem basilicae Canonico*, ed. DE ANGELIS, Rome, 1646.
[5] Above, 66 f.; also FERRETTI, *Note storico-bibliografiche di Archeologia Cristiana*, Rome, 1942, 38 ff., 40 ff.
[6] *AA.SS. Junii*, VII, Appendix, 57* ff.
[7] Above, 174, dig. 389-90; for the assignment of columns, KRAUTHEIMER, "Some drawings...", *Art Bull*, 31 (1949), 211 ff.

their *fenestella* [1]; the measurements, 390 feet long (apparently from the façade to the chord of the apse) and 226 feet wide, rough as they are, given by a near contemporary [2]. Likewise, fourteenth and fifteenth century visitors provide but scattered notes: the measurements, 165 *passus* long and 95 wide, of which 36 spanned the nave and 29 the double aisles north and south; four rows of twenty-two columns each in the nave; six more columns in each of the transept wings; those screening the openings from the aisles — the first time this placing is mentioned — and from the exedras; twenty-six steps ascending from the piazza [3]. (In 1452, Muffel counted twenty-eight steps [4].) The early sixteenth century guidebooks still limit themselves to brief remarks: the overall plan with nave, four aisles and a total of one hundred columns [5]; two columns of precious marble of which Paul II said, " they were worth more than all Venice " [6]; the measurements — length of nave, 240 *braccie fiorentine* (139.36 m.); of transept, roughly 126 *braccie* (73.58 m.); width of nave and aisles, 126 *braccie* — checked by Fra Mariano as 180, 155 and 95 of his steps [7]. The majority of guidebooks till the mid-sixteenth century, from Biondo to Fulvio and Fauno, hardly refers to the plan or details of the structure. The first physical description of the basilica published seems to be Panvinio's [8]. Writing about 1560, he lists the apse, with its half-dome carrying the mosaic of Innocent III; the transept; the nave and its four flanking aisles; the wide entablature (" *amplissimum peristylium* "), supported by " huge, beautiful columns "; the roof, often repaired; the windows of the nave and the openings in the wall rising from the arcade between the aisles; the remains of revetment on the aisle walls (" ... *minores parietes totidem minoribus columnis marmoreis fulciuntur, tot fenestras super se habentes, quot sunt intercolumnia. Extremi parietes basilicae olim toti lapideis tabulis incrustatae fuerunt quorum vix hodie vestigia supersunt...* ") [9]; the pavement, as he saw it, composed of large marble plaques of different colors; the doors in the façade; and the remains of the quadriporticoed atrium (" ... *quadriporticus cuius etiam nunc extant reliquiae...* ") [10]. But the description remains general; no measurements are given, no further details noted; the principal focus is still on the rank of the Vatican church, and hence on inscriptions and traditions proving its age, on papal tombs, on altars, oratories, relics, on furnishings and dotations excerpted from the *Liber Pontificalis*, on the standing of its clergy. Ugonio, in the eighties, describes the basilica along comparable lines [11]. But scattered through his description are some precise details: of the capitals in the nave some were apparently left in the rough — schematic capitals, " ...*non sono tutti forniti...* ", the reason being, he says, as some believe, the haste with which Constantine built [12]; the first two columns in the nave, apparently those mentioned by Albertini, of *africano* marble [13]; and, like Panvinio, he saw on the wall of the north aisle traces of *opus sectile*,

[1] Above, 174, same digest, and below 259.
[2] Above, digest, *loc. cit.*
[3] DONDI, *Iter Romanum*, c. 1375, in: VALENTINI-ZUCCHETTI, *Cod. Topografico*, IV, 69; see also *Memoriale de Mirabilibus Urbis Romae*, 1400, *ibid.*, 75 ff.
[4] MUFFEL, *Beschreibung der Stadt Rom* (128te *Pubblication des Litterarischen Vereins in Stuttgart*), Tübingen, 1876, 18.
[5] FRA MARIANO DA FIRENZE, *Itinerarium*, 77 ff.
[6] ALBERTINI, *Opusculum de Mirabilibus...Romae*, c. O IV v.
[7] FRA MARIANO, *op. cit.*, 77.
[8] PANVINIO, *De praecipuis...basilicis*, Rome, 1570, 33 ff. Preparatory notes taken on the spot are contained in his *schede*, Vat. lat. 6781, cc. 119v, 149v-151r. Of his *De rebus antiquis memoratu dignis basilicae S. Petri in Vaticano*, a fair copy, though faulty in points, exists in Vat. lat. 7010; a fragmentary copy, Book Three through part of Book Eight in Vat. lat. 6237; partial drafts and notes in Vat. lat. 6115 and 6780, cc. 76-226v; Vat. lat. 7010 is printed with corrections in MAI, *Spicilegium Romanum* IX, Rome, 1863, 184 ff., whence our quotes.
[9] MAI, *op. cit.*, 369 f.
[10] PANVINIO, *De praecipuis...basilicis*, 38.
[11] UGONIO, *Stationi*, cc. 83v. ff.
[12] *Ibid.*, c. 96.
[13] *Ibid.*

"... *Si conosce per alcuni vestigij che restano verso l'altare del Volto Santo che questa chiesa haveva i muri di tavole di marmo, e di artificiosi lavori adornati*"[1].

Alfarano's first chapter in his *De Basilicae Vaticanae antiquissima et nova structura* presents the only exact record of the Constantinian church by an eye-witness. Written between 1570 and 1582, the manuscript was being prepared from at least the forties. The description proceedes systematically: the apse; the transept and its exedras, each screened by two columns; the nave and the inner and outer aisles, differing in width; eighty-eight columns in nave and aisles, twenty-two to each row; the capitals, Corinthian; the nave entablature, its frieze with mosaic decoration, its cornice projecting as much as three *palmi* and protected by a railing, five *palmi* high; the aisle colonnades arcaded. Throughout he provides measurements which we tabulate below along with comparable ones drawn from other sources, graphic and descriptive[2]. As evident from the comparison, Alfarano's dimensions are round, omitting fractions of the *palmo*, as given in the architectural surveys. Likewise, it appears from the comparison that they were taken between vertical surfaces — walls, pedestals, plinths. At the same time, Alfarano provides information otherwise not available: diameter, depth and height of the apse; width, height and length of the transept; exterior and clear width of nave and aisles and their heights; height of the doors in the façade. Again, he is the only source from which to learn the number and dimensions of the windows. There were, he says, seventy-two all told; seven in the façade, two rows of three and an oculus; twenty-two in the nave, 22 *palmi* (4.70 m.) high by $14\frac{1}{2}$ *palmi* (3.23 m.), like those in the façade; eight in each transept wing, two in the end wall, three to the west, three to the east, all that size; five in the apse, smaller but still sizable, 16 by 11 *palmi* (3.57 by 2.45 m.). Also, he listed eleven windows in each of the outer aisles, "...*in posteriorum...minorum navium parietibus...*", giving their height, $12\frac{1}{2}$ *palmi* (2.72 m.), but not their width. For the convenience of the reader we reprint the parts of his text relevant to our investigations[3].

"... *Absis Basilicae, quam maiorem tribunam vocamus ... adhuc integra superest ad hemicichli instar, longitudinis ad occidentem palmorum quadragintaquatuor, latitudinis palmorum octuaginta, et altitudinis palmorum centum, inter quam, et transversam navem altare maius erectum fuerat ...; quod quidem altare nullus unquam summorum Pontificum ausus est aperire, vel a proprio loco removere, ...*

Transversa vero navis inter dictam absidem, idest tribunam, et Basilicae corpus sita erat et habebat in latitudine palmos septuaginta octo, et in altitudine centum septuaginta ad mensuram altitudinis Basilicae; in longitudine vero a meridie ad aquilonem habebat palmos trecentos et nonaginta ita constructa, ut mensuram latitudinis Basilicae excederet ... extendebatur namque extra mensuram parietum Basilicae a parte dextera palmos quadraginta quatuor et totidem a sinistra ... binis ex utroque latere, aequali spatio inter se positis columnis, et totidem parastitis cum suis fornicibus parietes sustinentibus intersecabatur; porro illae columnae paulo maioris altitudinis minoris navium columnis erant, quae postea Pii Quarti Pont. Max. iussu ad ornatum Portae Flaminiae Urbis transvectae fuerunt.

... Basilica ... a ianuis, quae sunt in fronte ante quadriporticum, usque ad dictam transversam navem, quae est in posteriori parte ad occidentem, habebat quadringentos et sex palmos in longitudine ab oriente ad occidentem, et ducentos octaginta quinque in latitudine, et centum septuaginta in altitudine, et per longum quatuor columnarum ordinibus intersecabatur ... ita ut in ea quinque porticus essent, quas naves vocamus; singulae in longitudine aequales, in latitudine vero mediana

[1] Ugonio, Stationi, c. 96v.
[2] Below, 216 f.
[3] Alfarano, 7 ff.

porticus sive navis, omnium maxima, habebat centum et sex palmos et in altitudine centum septuaginta. Reliquae vero binae ex utroque latere porticus, sive naves longe depressiores et minoris latitudinis erant. Etenim illae duae anteriores, quae medianae navi hinc inde a dextris ad meridiem et a sinistris ad aquilonem proxime adiacebant, habebant palmos triginta octo in latitudine, et octuaginta duos in altitudine. Rursus reliquae duae posteriores naves praedictis proximae, similiter ad meridiem et ad aquilonem hinc inde Basilicae muro adherentes paulo praedictis humiliores, habebant singulae palmos triginta novem in latitudine, et sexaginta duos in altitudine.

Omnes autem columnae, quae dictos quinque porticus, sive naves constituebant, erant octuaginta octo, et quilibet ordo columnarum habebat viginti duas columnas, et e regione se respicientes ... Sed super columnas capitella corinthia erant, et super capitella perystilia maxima, e marmore pario quadrata signis musiveis decorata, quae Basilicae parietes et tectum sustentabant. Minores vero naves habebant supra capitula columnarum loco peristiliorum arcus parietes sustinentes. Supra peristilium autem medianae navis intrinsecus per gyrum in parietum spissitudine per circuitum erat tabulatum latitudinis palmorum trium, et lignei lateres in circuitu ante tabulatum latitudinis palmorum quinque, ne homines inde pergentes cadere possent, et usque hodie aliqua vestigia visuntur. Ipsae vero columnae non aequalis altitudinis, et crassitudinis erant, nam medianae navis columnae habebant palmos quadraginta in altitudine et palmos sex in crassitudine; aliquae e marmore pario pulcherrimo, nonnullae e granito, et mixto, praeter duas primas columnas eximias valvis Basilicae proximas, quae habent palmos septem in crassitudine et integrae sunt, e marmore affricano speciosissimo inaestimabilis quidem praecii, et decoris nullibi unquam similes per Urbem neque per orbem repertae, quae usque hodie Basilicam ingredientibus cernuntur.

Sed et minorum navium columnae habebant in altitudine palmos viginti sex et semissem, in crassitudine vero habebant palmos quatuor, aliquae e pario marmore, nonnullae vero e granito et mixto elegantissimo, quorum omnium praedictorum nonnulla usque hodie monumenta ex dimidiata quae adhuc superest Basilica visuntur.

In capite autem cuiusque navis et ordinis columnarum ad occidentem unus fornix, sive arcus erat, qui sibi transversam navem cum abside coniungebant. Eatenus ipsi quinque fornices sex parastatis sustentabantur; medianae vero navis fornix maximus praeter duas parastatas duabus etiam magnis columnis ipsis parastatis adhaerentibus suffulciebatur, quem quidem fornicem antiqui arcum triumphalem vocabant.

Sed et ipsa Basilica antiquitus multas ianuas sive portas habebat, nam in parietibus ad orientem habuit portas quinque videlicet in mediana navi portas tres, aequalis latitudinis singulae palmorum viginti novem, et aequalis latitudinis singulae palmorum sexdecim. In duabus vero anterioribus minoribus navibus ex utroque latere medianae navi proximis portas duas aequalis altitudinis, singulae palmorum viginti octo, et aequalis latitudinis singulae palmorum quatuordecim. Porta vero, quae dicitur sancta in sinistra Basilicae parte addita in posteriori navi sinistra ad aquilonem, quae dicitur Vultus sancti ... est altitudinis palmorum sexdecim, latitudinis vero palmorum decem. Sed in parietibus a dextero Basilicae latere ad meridiem portas quinque, et totidem a sinistro, nec altitudinis, nec latitudinis aequales, per quas postea ad quasdam Ecclesias sive Oratoria circa Basilicam adaptati fuerunt aditus. In parietibus autem in transversa Basilicae parte ad occidentem portas duas habuit similiter, et ad meridiem portam unam aequalis altitudinis singulae palmorum decem.

Habuit etiam ipsa Basilica multas fenestras magnas omnes septuaginta duas; videlicet in mediana navi in fronte Basilicae ad orientem fenestras septem, tres in primo, et tres in secundo ordine, singulae aequalis altitudinis palmorum vigintiduorum, et aequalis latitudinis singulae palmorum quatuordecim et semissem, praeter septimam, quae constabat ex diametro palmis quatuordecim. In parietibus vero ex utraque dexterae et sinistrae eiusdem medianae navis partibus ha-

buit fenestras viginti duas; undecim ad meridiem, totidem ad aquilonem eiusdem altitudinis et latitudinis praedictarum, aequali spatio contra se invicem positas et e regione se respicientes. In posteriorum vero minorum navium parietibus a dextris et a sinistris etiam viginti duas, undecim ad meridiem, et totidem ad aquilonem aequali spatio, etiam contra se invicem positas et e regione se respicientes, singulae aequalis altitudinis palmorum duodecim, et semissem. In transversa etiam navi habuit fenestras sexdecim eiusdem altitudinis fenestratum maioris navis Basilicae, octo ad dexteram et octo ad sinistram. In dextera in parietibus ad meridiem duas, ad orientem tres, ad occidentem tres, contra se invicem positas, et e regione se invicem respicientes. In sinistra similiter octo videlicet in parietibus ad aquilonem duas, ad orientem tres et ad occidentem tres, pari modo contra se invicem positas, et e regione se respicientes. In abside etiam habuit fenestras quinque circum circa absidem positas, occidentem respicientes, singulae aequalis altitudinis palmorum sexdecim et latitudinis palmorum undecim.

Ipsa vero Basilica tota ex lateribus coctis constructa erat, cuius muri crassitudo palmos sex et semissem, et alibi septem aut octo non excedebat, et a pavimento usque ad summitatem parietum et laquearia tota ex musivo ac variis picturis veteris et novi testamenti depicta caelataque erat.

Sed et totius Basilicae tectum ligneum erat, e magnis tignis quadratis abiegnisque tabulis dolatis laqueatum, atque imbricatum. Medianae vero navis et transversae crucis tectum magnis aereis tegulis sexquipedalibus preciosissimis ex aere corinthio deaurato opertum erat. Reliquarum vero minorum navium ex latericiis imbricibus coctis tantum opertum fuerat, quorum aliqua adhuc monimenta supersunt.

Pavimentum autem magnis ac eximiis marmoribus rotundis ac quadratis, et variarum formarum erat stratum, et variis etiam coloribus albis porphireticis aegiptyacis granitis et deauratis erat vermiculatum atque exornatum. Sed et quadriporticus ut supra commemoravimus, ante frontem Basilicae erat cuius adhuc duae integrae supersunt partes, et in medio quadripartitae porticus atrium magnum sub divo albis marmoribus magnis quadris stratum, quod habet in longitudine ante faciem Basilicae palmos ducentos. Et in atrii medio fons aquae vivae erat, quae ex pulcherrimo aeneo labio corrivabatur ...

Porro anterior pars quadripartitae porticus inter Basilicae frontem, et ipsum atrium interiecta adhuc integra habet in longitudine palmos ducentos octuaginta quinque ad mensuram latitudinis Basilicae, ut in latitudine ante facie Basilicae palmos quinquaginta tres, et in altitudine quinquaginta quinque usque ad tectum, quod quidem parietibus frontis Basilicae, et a facie atrii decem columnis cum duabus parastatis in utroque porticus extremo existentibus sustentatur ... ac illas decem columnas positas in faciem templi Salomonis alludere videntur.

Sed et ipsarum decem columnarum medio ostium aeneum est contra medianam Basilicae portam, supra quod Beati Petri Apostolorum Principis marmorea statua in trono sedentis posita ... cum tegmine aeneo duabus columnis porphirecticis sustentato ...

Sed et dextera et sinistra quadripartitae porticus partes ex utroque atrii latere videlicet ad meridiem et ad aquilonem fuerunt longitudinis palmorum ducentorum quinquaginta sex ad mensuram longitudinis atrii, in latitudine vero singulae habebant palmos quadraginta et unum, et intrinsecus a facie atrii singulae habebant columnas tresdecim cum suis capitulis corinthiis, et fornicibus loco peristiliorum; extrinsecus vero totidem parastates latericios contra columnas positos, cum suis fornicibus aequali spatio inter columnas contra se invicem positos, et e regione se respicientes, parietes et tectum pariter sustinentes.

Posterior vero pars quadripartitae porticus, quae in atrii fronte ad orientem et super Basilicae gradus est, cuius aliquae adhuc supersunt partes, pluribus columnis et parastatis cum fornicibus sustentatur et intrinsecatur, et habet in longitudine palmos ducentos octuaginta quinque ad mensuram latitudinis Basilicae, et in latitudine ante faciem atrii ad orientem palmos octuaginta unum.

Porro a facie atrii ad occidentem in mediana parte porticus habet portas tres intra quatuor parastatas interiectas et binas hinc inde columnas, et singulas hinc inde parastatas in utroque porticus extremo singulos angulos porticus coniungentes et tectum sustinentes; et a facie graduum ad orientem habet portas tres contra praedictas ad occidentem aequali spatio positas marmoreis postibus cum valvis aeneis et quatuor columnis exornatas ...

In latere vero huius porticus dextero intrinsecus ad meridiem aulae pro ministris et Basilicae ianitoribus erant, et a sinistro ad aquilonem turris campanaria multis et pergrandibus campanis exornata.

Tectum etiam totius quadripartitae porticus, sicut et Basilicae ligneum erat, tabulis dolatis laqueatum, et imbricibus magnis e latere coctis etiam opertum, et aequalis altitudinis palmorum quinquaginta erat, praeter illam partem ultimo commemoratam in qua portae tres ad orientem super gradus erant, quae caeteris paulo eminentior fuit, in qua tres magnae fenestrae erant, per quas summos Pontifices diebus solemnibus populum in platea existentem benedicere solere conjicitur. Horum omnium nonnulla vestigia usque hodie conspiciuntur ...

Ante supradictas tres ianuas dictae postioris partis quadripartitae porticus ad orientem area magna super gradus usque hodie integra superest, habens in latitudine ante faciem portarum palmos septuaginta sex, et in longitudine palmos ducentos ad mensuram latitudinis atrij, magnis quadris marmoribus strata ...

Deinde gradus pergrandes marmorej ante dictam aream adhuc supersunt, per quos ad Basilicam ascenditur, omnes numero trigintaquinque in quinque praecinctionibus, sive ordinibus distributi ... qui simul omnes ... coniuncti in solo sunt latitudinis ante aream palmorum nonaginta quinque, longitudinis vero palmorum ducentorum ad mensuram latitudinis aereae et atrij, adeo ut pes sanctae crucis, qui solo figi solet minoris latitudinis sit cum in terra plantari debeat ...

Ante dictos denique Basilicae gradus magna est etiam Platea ... quam maiores nostri cortina sive portica sancti Petri vocabant, in qua olim fuit magnus fons porphireticus a Symmacho papa erectus ... circa quam plateam fuerunt pulcherrimae domus, inter quas fuit xenodochium a Beato Gregorio primo extructum pro schola cantorum ... quod iam diu exoletum, et in domum conversum, Pius Quartus Pontifex Maximus ampliandae dictae plateae gratia disiecit, insuper et Ecclesiam Sancti Gregorij, et alteram, quae prope erat, sanctae Mariae Virgariorum pene abiectas diruit ...''

While on the whole remarkably reliable, a few of Alfarano's statements warrant some doubt. He was, after all, neither an architect nor primarily concerned with architectural matters or terminology. Moreover, by the time he became involved with Old St. Peter's, in the 1540's, most of the western half of the basilica, including the transept, had been or was about to be demolished; when, thirty years later, he composed the manuscript, these parts were gone and his memory may have deceived him. Hence, not being an architect, he occasionally is satisfied with a summary statement: *all* capitals were Corinthian — we know some were " schematic "; *all* shafts in the nave are 5 *palmi* in diameter and 40 *palmi* high, whereas they ranged from as little as 4½ to as much as 5.1.2 *palmi* in diameter and from 38.8.3 to 39.10 *palmi* in height[1]; the whole church was built of brick, whereas both the archaeological evidence and Grimaldi's observations coincide in establishing that at least some parts were built in *opus listatum*[2]. Along with such inaccuracies, outright errors seem to have slipped into the text; the columns of the exedra-screens carried, witness the graphic evidence and contrary to Alfarano, an entablature rather than arches (" ... *columnis et totidem parastatis cum suis fornicibus* ... ")[3] — unless he meant blind relieving arches; that the triumphal arch was supported by columns alongside

[1] In this section, we shorten the indication of *palmi, oncie, minuti* (*palmi, dita, grani*) in this way.
[2] Above, 186, and below, 213.
[3] Alfarano, above 208; for the graphic evidence, below, 225 and fig. 204.

the T-piers, ("*...medianae navis ... fornix maximus praeter duas parastatas duabus magnis columnis ipsis parastatis adhaerentibus sustentabatur ...*"), is likewise contradicted by contemporary plans and views [1]; on the other hand, he failed to mention the columnar screens in each of the aisle openings towards the transept, attested to by that same graphic evidence [2].

Where the old structure, wholly or in parts, survived into the late sixteenth century, Alfarano, between the remains he saw and measured and the sources he read, arrived at reliable results [3]. In the atrium he noted the Pigna and its baldacchino, the latter resting on eight porphyry columns, surmounted by a bronze vault with peacocks and dolphins, and enclosed by marble plaques decorated with griffins — the plaques were removed in 1574. The west portico along the façade likewise remained, supported by ten columns and two end piers — did Dosio (fig. 211) add, or did Alfarano omit, two columns attached to these piers? Of the east portico, the gatehouse was standing as well as the flanking bays north and south, triple-arcaded, each with two columns placed between piers and corner piers, "*...binas hinc inde columnas, et singulas hinc inde parastatas in utroque porticus extremo singulos angulos porticus coniungentes ...*" [4] — an eighth or ninth century rather than a Constantinian design. The north and south porticoes, according to Alfarano, were supported each by thirteen columns with Corinthian capitals and by corresponding wall piers, both carrying arches, "*... intrinsecus a facie atrii ... columnas tredecim cum suis capitulis corinthiis et fornicibus ... extrinsecus vero totidem parastates latericias contra columnas positas cum suis fornicibus intro columnas contra se invicem positos...*"; the length of the porticoes he gives as 256, their depth as 41 *palmi* (57.19 and 9.16 m. respectively) [5]. Given the precision of these indications on the one hand, and the disappearance of these lateral porticoes in the fifteenth century on the other [6], one inclines to believe that Alfarano knew some visual evidence, possibly parts walled up behind the late flanking façades. Finally, Alfarano provides information about the front of the gatehouse facing the piazza: somewhat higher than the porticoes of the atrium, "*... caeteris paulo eminentior ...*" [7], its three doors had marble frames donated by Nicholas V — Grimaldi read his name on the architraves [8]; in between rose four columns, and three large windows opened on the upper floor — a doubtful point since sixteenth century drawings show small windows surrounded by the mosaic of Paul I [9]. The campanile to the north flank of the gatehouse is but briefly mentioned [10]. Otherwise his description is further explained by his plans.

Baronio, writing in 1592 or shortly before, observed with greater precision: the column bases differed from each other, the shafts varied in material, the capitals were of different orders, and the entablature and the doorsills heterogeneous; in brief, the materials were all spoils [11]. In the second edition of the *Annales*, 1594, he added that in tearing down the apse a number of bipedales were found *in situ* bearing the brickstamp of Constantine [12].

Grimaldi took his notes while the last Constantinian remains were pulled down and they add a good deal of pertinent information, notwithstanding a few passages so far defying a full

[1] ALFARANO, above 209; see also CERRATI, *Ibid.*, XXXVII f.
[2] Below, 214 f., 249 and figs. 193, 200.
[3] Below, 239 ff.
[4] ALFARANO, above, 211.
[5] ALFARANO, above, *loc. cit.*
[6] Below, 229; figs. 194, 211, 212.
[7] ALFARANO, above, 211.
[8] GRIMALDI, *Descrizione*, ff. 152, 157v.
[9] ALFARANO, above, 211; also above, 175, dig. 757-767; for the graphic evidence, figs. 213, 214.
[10] ALFARANO, above, 211.
[11] BARONIO, *Annales ecclesiastici*, III, Rome, 1592, 240.
[12] *Ibid.*, Rome, 1594, last (unnumbered) page of Index, addition to p. 247 C.

understanding. He saw the foundation walls, both south and north, believing the former to be the walls of Nero's circus, the latter to be Constantinian. Of the former, he gives height and width, 41½ and 14 *palmi* (8.95 and 3.12 m.) [1] respectively, as well as the level of the foundation setback, 30 *palmi* (6.69 m.) below ground. Of the foundation to the north he measured only the width, 14 *palmi* [2]. A second point regarding these walls is less clear. When the foundation trenches for the south campanile were dug in 1618-1619, he saw, so he says, the Constantinian wall — given the location, it must have been that of the atrium — resting on fill; 50 *palmi* down he saw what he believed to be a street pavement; below, the fill continued another 40 *palmi*, to the bearing soil at 135 *palmi*, "*...fundati erant supra terram motam sicut inspectum est in fundando novo campanile ad meridiem ... invenerunt viam publicam silice stratam subtus terram ad palmos 50, terram motam ad palmos 90, solidam argillam ad palmos 135 ...*" [3]. The passage is not quite clear but it may mean that he saw below the flagstone pavement the fill, and below that the bearing soil. Another passage in want of interpretation concerns the building material of the walls. Like everyone else, he calls them brick but adds that the apse, the outer and upper walls, and the façade were built of pieces of brick and tufa, "*...laterum topharumque fragmentis ...*" [4]. Were the walls then in their upper parts built of *opus listatum*? We know after all only the very bottom of the rising walls. Or did he see repairs? Or, did he refer to the concrete fill between the brick faces? We have to conclude with a *non liquet*.

In other respects his information is not open to question. The colonnades and entablature were composed of spoils. The two first columns counting from the façade were of *africano* marble and reused in the portico of the new church; the third and fourth columns on either side were of unpolished *porta santa* [5]; of the bases, many did not fit the columns; of the capitals, some were finished, others remained in the rough; on two capitals on the gatehouse there were portraits of the emperor Hadrian, "*... capitella partim absoluta, partim imperfecta. Bases multae columnis apsimilis ... in duabus columnis ... in valvis pro foribus graduum basilicae in capitellis similacrum Hadriani imperatoris*" [6]. Another capital bore an inscription of a Vestiarius Alliarus; a base, the epitaph of a Roman soldier [7]. And on the entablature could be read the fragments of an inscription of Trajan's in large lettering referring to Titus, "*In magnis marmoribus zophorum sustinentibus super capitellos columnarum mediae navis fragmenta cuiusdam nobilis inscriptionis alicuius praestantissimi aedificii ... literis Romanis palmi unius cum duobus tertiis erant huius modi ...*" [8]. A few of Grimaldi's notes refer to the state of the church and to repairs. The overhang of the walls he notes was 5 *palmi* [9], 1½ more than Antonio da San Gallo's measurement seventy years before [10]. Of the second pair of nave columns counting from the façade, both were composed of two pieces of Carrara marble. And between base and shaft of the southern column a coin of Louis I of Anjou was found — proof that that column was replaced around 1370 [11]. Below the pavement, composed of marble fragments, as he saw it, another floor was found, "*... vermiculato opere*" [12], and hence, not as Grimaldi thought Constantinian, but presumably eleventh to thirteenth century. Lastly and perhaps

[1] GRIMALDI, *Descrizione*, 241 f., c. 206v.
[2] *Ibid.*
[3] *Ibid.*, 242, in a note of Grimaldi's added later.
[4] *Ibid.*, 242 f., c. 207v.
[5] *Ibid.*, 213 f., c. 175v.
[6] *Ibid.*, 242 f., c. 207r.
[7] *Ibid.*, 329, c. 286r.
[8] *Ibid.*, 242 f., c. 207v.
[9] *Ibid.*, 241, c. 206r.
[10] Below, 220.
[11] GRIMALDI, *Descrizione*, 213, c. 175v, with erroneous attribution of the coin to the emperor Louis II, resulting in a date around 870.
[12] *Ibid.*, 141, c. 107r.

most important, in the atrium, too, below the marble pavement, Grimaldi saw a second pavement, composed of white mosaic 4 *palmi* (89 cm.) down — a difference in level obviously to be overcome only by five or six steps from the atrium to the narthex. " *In demolitione sub Paulo V repertum fuit antiquum pavimentum atrii ex lapillis albis musivo opere ... quod Constantini fuisse ab omnibus creditum subtus terram ad palmos circiter quattuor supra quod Donus papa marmoreum posuit ablatos tabulos magnos lapideos a sepulcro ...* "[1].

Martinelli, Severano, Torrigio and Ciampini, all writing after the demolition of the Constantinian church, only repeat Grimaldi's observations.

3. Graphic evidence

Archaeological evidence for envisaging Old St. Peter's is scarce. On the contrary, graphic evidence is plentiful: plans, an odd section of the nave, views, details.

a) Plans

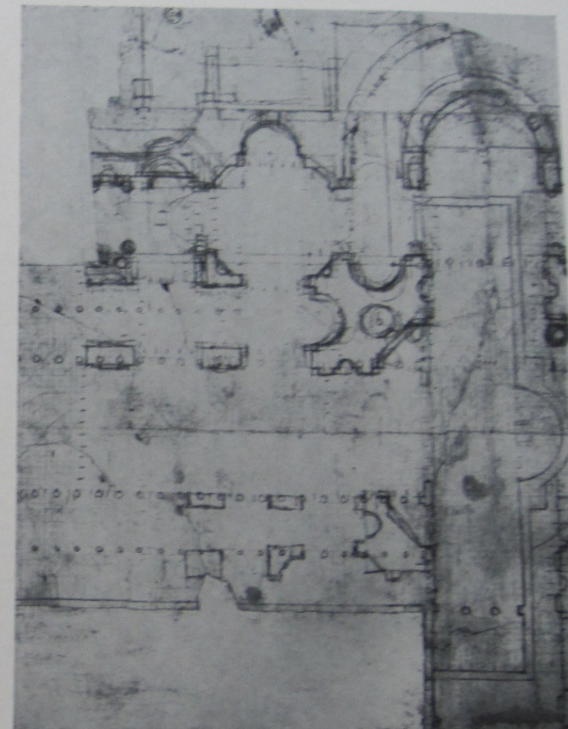
Outstanding among plans antedating even the first demolition work on Constantine's church is the big sanguine drawing, UA 20 (fig. 193). Drawn, whether by Bramante or under his supervision[2], when the scale and shape of New St. Peter's and in particular its crossing piers were still under discussion in the winter 1505-1506, it shows superimposed the proposals for the new structure, the preceding fifteenth century project, built only in part, and the Constantinian basilica. Of the latter, the overall lay-out is clear; nave, doubled aisles on either side, outer walls, colonnades, terminating T-piers at the western end; the transept and its colonnaded exedras north and south; the columns in the openings of the aisles towards the transept, two in each; the apse, flanked by squarish buttresses of unequal size. Missing are the façade, the first column on either side, the atrium and gatehouse. Since the plan is drawn on graph paper, each square measuring five *palmi* (1.117 m.), the dimensions can be scaled off. However, the squares are drawn freehand and the crayon lines of the plan are too soft for mathematically exact measuring. Thus the figures obtained are only approximate.

UA 20 is supplemented by a plan of Baldassare Peruzzi's, UA 11[r] (fig. 194). Sketched in pen and ink, when the first counterpiers of the new nave had been built in their lower parts between 1524 and 1527, it shows the portions of the old church east of that pier and north of a center line: twelve columns each of nave and aisle colonnades, outer wall, façade, atrium, gatehouse, landing and ascending steps. Dimensions are written in. All measurements of walls and columns appear to be approximations, however, and rounded off to the next full figure, as witness the survey of the columns, UA 108[r] and 108[v], to be discussed later, and the preparatory sanguine underdrawing of the pen sketch UA 11[r]. This sanguine drawing varies some of the measurements and supplies others later omitted. Sketches of the narthex and the first nave bays on another Peruzzi drawing, UA 119[r] and [v], provide supplementary, though at times divergent information, for example, the width of half the narthex, 150 1/2 *palmi*; this apparently is a mistake due to the draughtsman's having marked as his terminal point the inner face of the side wall of the narthex, but measured to its outer face. Indeed the thickness of that wall, given as 3 1/2 *palmi* in the sanguine notes on UA 11[r] is marked here as 5 1/2 *palmi*.

More significant in our context are some figures on UA 119[v] regarding the length and width of the nave and aisles, those to the south apparently shortened already by a transverse wall prior to building the *muro divisorio* across the nave in 1538: length from that wall to the façade,

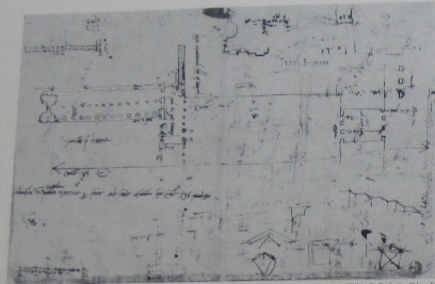
[1] GRIMALDI, *Descrizione*, 362, c. 317.

[2] The attribution to Francesco Sangallo, suggested by FREY, *Bramante-Studien*, I, Vienna, 1915, 11 ff., can be safely dismissed.



(Florence, Uffizi, G. D. S. U., UA 20)

Fig. 193. St. Peter's. Bramante (?), detail of plan, Constantinian basilica and project for new church, ca. 1506.



(Firenze, Uffizi, G. F. S. G., UA 11r)

Fig. 194. St. Peter's. B. Peruzzi, sketch plan of Constantinian basilica, nave, east half and atrium, 1524-27.

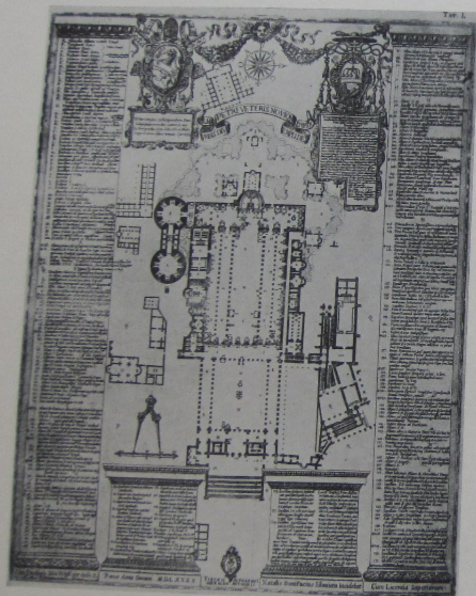
$191^{1}/_{2}$ width, 184 *palmi*. The measurements from the Peruzzi drawings, UA 11r, ink and sanguine, UA 119r and v, and Alfarano's plan, to be discussed next, have been tabulated in the following chart all in *palmi*:

	Alfarano	Peruzzi UA 11r ink	Peruzzi UA 11r sanguine (where differing)	Peruzzi UA 119r
Apse				
width	80			
depth	44			
height	100			
Transept				
height	170			
length	390			
width	78			
Nave and aisles				
total width exterior	302			
clear width	285		284	
Nave				
height	170			
width	106			108
length		224 (from counter-pier to inner façade wall of nave)	222	
total clear length	406			
Inner aisles				
width	38	39 1/2		40
height	82			

	Alfarano	Peruzzi UA 11r ink	Peruzzi UA 11r sanguine (where differing)	Peruzzi UA 119r
Outer aisles				
width	39			40
height	62			
Nave columns				
height	40			
diam.	6 and 7 [1]	5		4 1/2
intercol.		15		
Aisle columns				
height	26 1/2			
diam.	4	3 2/3		3
Nave door				
height	29			
width	16	16 1/4	16 1/3	16 1/4 (?)
Aisle doors				
height	28		1 profile of door jamb on portal of inner north aisle	
Walls				
width	5-8	6 1/3 (façade) 6 2/3 (flank)	7 1/3 (façade)	
Atrium				
west portico (narthex)				
depth	53	57 including arcade	56 3/4	
width	285 [2]	286		150 1/2 including south wall
height	55			
North and south porticoes				
length	256			
width	41			
east portico				
length	285			
Gatehouse				
depth	81	81 1/3		
thickness of walls	3 1/2 (west) 5 (east)		3 1/3	
Open area				
length	200			
Landing				
depth	76			
width	200	total length from counterpier to end of landing in front of gatehouse 715		

[1] Referring to those near the entrance.
[2] JONGKEES, 26, gives 298 *palmi*.

While best known, Alfarano's engraved plan (fig. 195), taken by itself, is far less reliable. First, the engraving, done in 1589-90, only transfers on to the copper plate a drawing now lost, prepared in 1571; thus it is second-hand [1]. Second, this drawing itself dates after the demolition of the western portions of the old church, except the apse and its front wall. The transept and the western half of nave and aisles had been gone since 1538 or shortly thereafter; Alfarano, in Rome from 1544 or somewhat before, might still have seen remains, but hardly measured them [2]. Third, structural features to him were of lesser import than liturgical elements



(Alfarano, ed. Cerrati)

Fig. 195. St. Peter's. Alfarano, plan of Constantinian basilica, partly reconstructed, *ca.* 1555-70.

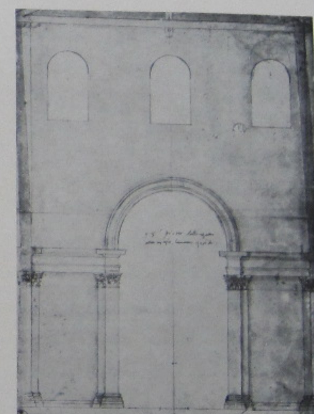
[1] Cerrati, in ALFARANO, XXVII ff., and pl. II, where the drawing is reproduced.

[2] *Ibid.*, xii ff.

— altars and relics, or tombs. In brief, for the western portions of the basilica, the plan had best be taken as supplementing Alfarano's written description and the measurements of plan and elevation contained therein. However, Alfarano's plan in its two versions — the drawing of 1571 and the engraving — pins down some elements not surveyed elsewhere: the entrances to, though not the shape of, the annular crypt beneath the raised apse and the number of steps — three — ascending to the latter, both in the engraving and in the drawing; and in the drawing the exact position of the *muro divisorio*, the wall built in 1538 on the line of the eleventh pairs of nave and aisle columns, to separate the eastward remains of the old church from the westward construction site of New St. Peter's. These eastern portions of the structure, untouched until 1608, were well known to Alfarano and for them both his description and plan can be relied upon: the eleven intercolumniations of nave and aisles; the atrium and its gatehouse; the landing and the steps ascending from the piazza. For the nave and aisles, this plan, to be sure, contributes little new information. On the other hand, it seems to be the best source available for the atrium. Narthex, courtyard and cantharus on the plan correspond to the evidence available elsewhere. The plan also renders the porticoes north and south, corresponding to Alfarano's description; only the opening of the outer walls in piers and, obviously, arches, remains unexplained and we cannot accept it as evidence. For the structures terminating the atrium eastward and on the outside, facing landing and piazza, his plan and description are the most complete source. In the middle rose the gatehouse, communicating with both courtyard and landing through triple gateways divided by piers; inside, a diaphragm arch halved its depth, — a full 81 *palmi*, one recalls. On either side, the gatehouse was flanked by doubled structures; west towards the courtyard, halls, half the depth of the gatehouse, each opened in a triple arcade resting on half-piers and two columns; east, backing the halls, unexplained structures, the one north enclosing the campanile. Finally, in front, the landing and steps ascended from the piazza.

b) Section and elevations

Antonio da Sangallo the Younger's building project for the *muro divisorio*, UA 121, whether drawn by him or a member of his workshop, provides the only surviving measured section of the old nave (fig. 196). A 10 *palmi* scale and the note 40 *palmi* [1], giving the width

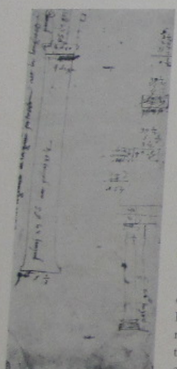


(Florence, Uffizi, G. F. S. G., UA 121)

Fig. 196. St. Peter's. Antonio da Sangallo the Younger, elevation of *muro divisorio* and section of Constantinian nave.

[1] The scale measurements taken by us give only 38½ *palmi* width.

of the opening planned in the *muro divisorio*, provide the basis for establishing the height and thickness of the Constantinian clerestory walls, the height of nave columns — base, shaft, capital — and entablature, the projection of its crowning cornice and the southward overhang of both clerestory walls. Excepting the latter, with the written notation $3^{1}/_{2}$ *palmi*, and given both the scale of the drawing, 1 : 133, and its character — a finished drawing done in the studio, rather than on the site — all measurements taken from the drawing can at best be approximate. Moreover, the drawing being a project for the *muro divisorio*, Sangallo envisaged an order of pilasters and half-pilasters as tall as the Constantinian nave colonnade, but rising from bases with plinths and sub-plinths much higher jointly than the Constantinian bases and plinths; these latter in his drawing he changed to the new design — presumably he planned to use a stucco covering. Indeed, while on UA 121, base, plinth and sub-plinth of the nave columns, both north and south, on the edge of the drawing total *ca.* 5 *palmi* (1.13 m.) in height or *ca.* 4 *palmi* (0.89 m.) without the sub-plinth, the Constantinian base and plinth, as preserved on the *muro divisorio* north of center, are only 0.584 m. high. In short, the Sangallo drawing, in details anyhow, is less reliable than it seems at first glance. The figures given on UA 121 are tabulated on the following chart (A.F.):



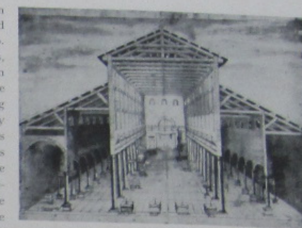
(Florence, Uffizi, G. F. S. G., UA 120r)

Fig. 197. St. Peter's. B. Peruzzi, Constantinian nave colonnade, elevation and column shaft, 1524-27.

UA 121: *readings from graphic scale of* 10 *palmi*		*Christern*
Graphic scale equals:	0.0285	
clear width at base of clerestory, 0.297 m.	104.21	
thickness of clerestory wall, 0.011 m.	3.92	
width of nave center to center	108.13	106.0
ht. from pavement to soffit of architrave, 0.142 m.	49.77	48.0
ht. of entablature, 0.026 m.	8.96	9.2
ht. to bottom of truss, 0.4095 m.	143.58	144.0
th. of bottom chord of truss, 0.008 m.	.28	
deviation from vertical, 0.10 m., written dimension 3½ p.	3.51	
clear width of nave at window sill, measuring inscribed lines, 0.2948 m.	103.44	107.0 (?)
ht. to window sill, 0.345 m.	121.10	
ht. of windows, 0.076 m.	26.66	26.6
w. of windows, 0.43 m.	15.09	15.3
ht. of col. shafts, 0.112 m.	39.33	39.9
ht. of caps., 0.0145 m.	5.08	5.2

Obviously, all being spoils, plinths and bases and likewise capitals, column shafts and pieces of entablature varied in height and profile throughout the building. UA 120^{r}, in Peruzzi's hand, shows this and provides additional data regarding the elevation (fig. 197). Next to the drawing of a column shaft, $39^{1}/_{2}$ *palmi* high, hence from the nave and to be discussed later, he sketched a column giving its shaft that same height, but provided it with plinth, base, capital and the frieze and architrave of an entablature. Measurements both accompany the sketch and are added up elsewhere on the sheet: the base and its plinth, $3^{1}/_{2}$ *palmi* (0.784 m.); the shaft, $39^{1}/_{2}$ *palmi*; the capital, $5^{5}/_{6}$ *palmi*; architrave and frieze, $6^{1}/_{6}$ *palmi* — the height of the crowning cornice because of its projection was hard to measure; the total height of the column with capital and base, $48^{5}/_{6}$ *palmi* (10.91 m.); of the order to the soffit of the cornice, 54 *palmi* (12.04 m.).

Elevations of the nave are preserved in the drawings done by Tasselli and copied for Grimaldi's codices, such as Barb. lat. 2733. Given Grimaldi's interests, antiquarian and liturgical rather than structural, these renderings focus on the murals in the part of the nave surviving until 1608. In passing, as it were, they give the number of columns and windows and some architectural details, such as the Gothic window tracery, but provide no information regarding the measurements. In our context they contribute but little. The same holds of the Grimaldi renderings of the inner façades of nave and aisles and of the *muro divisorio* traversing nave and aisles [1].



(Bibl. Vat. Grimaldi Album)

Fig. 198. St. Peter's. Copy after Tasselli, Constantinian basilica, interior view of nave facing *muro divisorio*.

Finally, there are the schematic representations of the interior, done while the eastern half of the basilica remained standing, the best being Tasselli's drawing in the *Album* and the one in Grimaldi's Barb. lat. 2733 (fig. 198). Unreliable in detail, impossible in proportion and awkward in execution, they yet offer evidence for a number of important features of the Constantinian church poorly documented otherwise; the pedestals carrying the columns in the arcades separating the inner and outer aisles; the openings in the walls rising from these arcades; the roof construction of nave and aisles, often renewed but very possibly still reflecting the original; and the safety railing, conveying an indication of the width of the nave cornice.

c) Views

Numerous views, drawn while New St. Peter's was under construction, show the remains of the Constantinian church. While not measurable with precision, they provide a good deal of information regarding the plan, elevation and proportions of the basilica.

The earliest view surviving — it dates presumably from *ca.* 440 — is the representation of the Shrine of Saint Peter on the Pola casket (fig. 223) [2]. It shows the shrine proper, its servicing and the surmounting architectural elements; the tall niche of the *tropaion*, as much as emerged from the Constantinian pavement; a low forward projection, resembling a cupboard, its two-leaf door clearly marked; two figures depositing an offering (?) on the projection's upper plane; a cross standing on the projection, possibly the gold cross donated by Constantine and Helena [3]; six vine scroll columns, four supporting the ribs of an open baldacchino, the other two right and left in line with its rear columns; a *corona* hanging from the top of the baldacchino where the ribs intersect; an entablature with dentil frieze, cymation and sima, linking the baldacchino and lateral columns; curtains in the intercolumniations on either side of the baldacchino; and figures in front of them, two men to the left (i.e. on the honourable side of the shrine), two women to the right.

[1] GRIMALDI, *Descrizione*, fig. 52 (cc. 108^{v}-109^{r}); fig. 55 (cc. 113^{v}-114^{r}); fig. 59 (cc. 121^{v}-122^{r}).
[2] BUDDENSIEG, «Le coffret en ivoire de Pola...», *Cah. Arch.* 10 (1959), 157 ff., esp. 158 ff.
[3] Above, 172, dig. after 324 and before end 329.



(Eton College, by kind permission of the Provost and Fellows)

Fig. 199. St. Peter's. Anonymous, eleventh century, Constantinian basilica, façade.

In our context, of like importance is the drawing in the eleventh century Farfa Codex at Eton, notwithstanding the discursive presentation, the abbreviations and contractions that mark all medieval representations of architecture (fig. 199). The nave façade continues uninterrupted by a cornice into the triangular gable. It is pierced by only one row of three windows — were there only that many, or are they contracted from six? The roof of the narthex in front, marked as it is by three small gables, suggests in typical medieval abbreviation the lateral porticoes of the atrium and the porch projecting from the narthex; just as the peacocks on the roof seem to have flown there from the Cantharus. The very presence in the drawing of the fifth century mosaic on the façade makes it obvious that we are still confronted with the Constantinian façade.

Next in time — and by-passing the many schematic, abbreviated or fanciful representations of fourteenth and early fifteenth century date — is Jehan Fouquet's view of the interior[1]. Contained in his *Grandes Chroniques de France*, *ca.* 1465, it is based in all likelihood on a drawing done between 1443 and 1447 on his trip to Italy (fig. 200). One sees the western half of the nave with thirteen columns on either side; the surmounting entablature, its top apparently used for a catwalk and protected by a railing; the clerestory, eight windows south and six north and thus evidently not corresponding to the intercolumniations below; rows of columns separating the aisles, dimly visible beyond the nave colonnades; the triumphal arch, resting on strong piers — the entablature continues onto them — and surmounted by the high, bare west gable of the nave; and an open truss roof. Beyond the triumphal arch, at a distance marking



(Paris, Bibl. Nat.)

Fig. 200. St. Peter's. Jehan Fouquet, Constantinian basilica, interior.

[1] Above, 168, *ca.* 1465.

the depth of the transept, appears the apse, its opening lower than that of the triumphal arch, its wall pierced by five round-topped windows, filled with tracery. While schematic in detail, such as capitals and entablature, and unreliable in placing the nave windows and in rendering the proportions, the miniature conveys a good idea of the overall aspect of the interior.

In the background of an *Adoration of the Child* datable about 1490 and attributed to Piero di Cosimo, now in the Toledo Museum of Art, Toledo, Ohio, appears one of the earliest known *vedute* of Old St. Peter's (fig. 201). Drawn in poor perspective and unreliable in detail, it nonetheless presents with remarkable clarity the outstanding features of the old basilica: to the right, the tall gatehouse, followed by the side walls of the atrium; then the narthex; the façade of the basilica with two rows of windows, strange as it is, six to each row; the cavetto atop the façade surmounted by a triangular gable, opened in an oculus; the nave, its clerestory with only seven windows, all filled with gothic tracery; the nave roof terminated at its western end by the slope of a hip roof; the south aisle, its windows, again with Gothic tracery, partly hidden by chapels, such as the chapel of Sixtus IV, easily identified; the obelisk and the rotunda of S. Maria delle Febbre, formerly S. Andrea; finally the transept, much lower than the nave, its roof, indeed, so low as to slope from underneath the eaves line of the nave roof at its western end. It is impossible to tell whether or not the painter marked windows in the transept walls. But, though he possibly exaggerated it, he obviously caught one of the features that most impressed him, the difference in height between nave and transept[1].



(Toledo, Ohio, Museum of Art)

Fig. 201. St. Peter's. Piero di Cosimo, *Adoration of the Child*, detail, Constantinian basilica from south.

Most impressive and most reliable is a group of *vedute* done by Marten van Heemskerck during his sojourn in Rome, 1532-1535. The majority are contained in the two volumes of a sketchbook of his, now in the Berlin Kupferstichkabinett[2]; a few scattered ones are in the Albertina in Vienna, at Stockholm and at Chatsworth.

His interior view of the nave (Berlin II, f. 52r; fig. 202) is focussed on the rising parts of New St. Peter's and, in its center, Bramante's shrine enclosure, the *tegurium*[3]. Crossing

[1] John Shearman, who identified the view as representing St. Peter's, remains doubtful regarding the interpretation of the low structure as the transept. Julian Gardner recognized it as such and called our attention to it. We side with him, notwithstanding the 'incorrect' juncture of transept and nave, and are most grateful to both Professor Shearman who gave us permission to use the photograph, and Professor Gardner.

[2] Call numbers 79 D 2 and 79 D 2a, published Huelsen-Egger, *Heemskerck*. We quote them as Berlin I and II respectively.

[3] See also text, Hülsen-Egger, *Heemskerck*, 32 f.

piers and arches stand to their full height, the eastward counterpiers to a height of roughly 13 m. Behind the *tegurium* on either side extends the west wall of the old transept. In the fore- and middle-ground right and left rise the remains of the old nave: first, columns nine to twelve, all with plinths, bases and Corinthian capitals; above, the entablature composed of architrave, frieze and projecting bracketed cornice, north and south apparently differing in profile; lastly, the upper walls, with a double tier of murals, as in Grimaldi's drawings, with windows over the ninth and eleventh intercolumniations and with murals — single figures — between. Colonnade and entablature continue behind the counterpiers with columns sixteen, seventeen, eighteen; of the three columns removed in building the counterpiers, two lie on the ground at the foot of the south counterpier. Another shaft, half-hidden by the fifteenth century organ loft and a piece of entablature further west, lie at the foot of



(Berlin, Kupferstichkabinett)

Fig. 202. St. Peter's. Heemskerck, interior of Constantinian nave and crossing of new structure with Bramante's *tegurium*, *ca.* 1532-36.

the northern counterpier; it is probably the shaft sketched by Peruzzi, UA 120^r. Still further on, behind the southeast crossing pier of New St. Peter's, appears the T-pier terminating the south colonnade. The northward tongue of the T is half-demolished, as is the south tongue of the north pier opposite; but its east tongue remains standing, and the surmounting piece of entablature *in situ* suggests that at least the last column south, twenty-two, must also still be standing. Behind the north colonnade one has a glimpse of the low, colonnaded arcade separating the aisles. The wall and window terminating the right-hand aisles at right angles to the nave and aisle arcades represent presumably the *muro dell'organo*, marked in UA 119^v, and the predecessor of the *muro divisorio*. When between 1551 and 1561, Naldini, if it was

he, drew the structure from about the same point, the colonnades west of the *muro divisorio* were gone; only the *tegurium* and, backing it, the apse and fragments of the transept wall on either side were left (fig. 203).

Heemskerck's Stockholm drawing (fig. 204) provides better evidence for the transept. Standing in the exedra at the end of the north transept, he saw close to him the two columns and the western half-pier of the exedra screen, the columns with veined marble shafts and Composite capitals, the surmounting architrave with three fasciae. Beyond and to the right, he saw the west wall of the transept, its top still visible over the center of Bramante's shrine, and a window with tracery, near the middle of the north wing. To the left, he saw first the west pilaster of Bramante's northeast crossing pier; further on, the southeast pier with its entablature and pendentive, the south crossing arch and the eastern counterpier of the south arm of New St. Peter's. Amidst these new parts rise the remains of Constantine's church: far back, one column with Composite capital and the entablature of the south exedra, surmounted by a high frescoed wall, pierced it seems by a large window to the left; in front of Bramante's southeast crossing pier, the southern T-pier of the old nave and barely but clearly marked, the capital of column twenty-two in that colonnade; still closer, one of the vine columns of the eighth century screen, though not in its original position; lastly, almost hidden by the pilaster projecting west from Bramante's northeast pier, the column, capital and entablature standing in the opening of the old basilica be-



(Hamburg, Kunsthalle)

Fig. 203. St. Peter's. Naldini (?), interior of Constantinian nave and crossing of new structure with Bramante's *tegurium*, *ca.* 1570.



(Stockholm, National Museum)

Fig. 204. St. Peter's. Heemskerck, Constantinian transept, crossing of new church and Bramante's *tegurium*, from north exedra, *ca.* 1532-36.



(Berlin, Kupferstichkabinett)

Fig. 205. St. Peter's. Heemskerck, remains of Constantinian nave, aisles and transept, and new structure from northeast.

tween the inner north aisle and the transept[1].

A group of drawings, showing New St. Peter's in construction from the outside, gives additional information on Constantine's basilica. Heemskerck's view from the north, Berlin I, f. 13^{r}, renders its remains squeezed in between and east of Bramante's crossing and the two counterpiers of his north arm (fig. 205). To the left, he saw the outer wall of the north aisle, pierced by a large opening springing from a sill; too large for a window and too high from the ground for a door, it is hard to explain. Further back between the eastern counterpiers and the crossing piers of the new structures, he saw the upper part of the arcade dividing the old inner and outer aisles and, still further back, the entablatures of both nave colonnades, as well as parts of two columns: one, including its capital, to the north, not too far west of the counterpier and thus possibly number sixteen — thirteen to fifteen having given way to that pier[2]; and, barely visible through the opening in the aisle wall, the lower end of a shaft in the south colonnade, number seventeen to judge by its position. More in the foreground and to the right rose the remains of the north transept: the end wall raised to its full height in 1154-1159[3] and divided by a cornice on brackets, the lower part right of center marked by a niche, possibly a blocked window, the upper by two oculi — of an original total of five, it would seem; standing at right angles, the east wall of the north exedra, topped by a cyma cornice, seemingly higher up and very different from that on the end wall; finally, in the shadow, the wall rising from the colonnaded exedra screen, its gable above a cornice on brackets, pierced by two narrow windows.

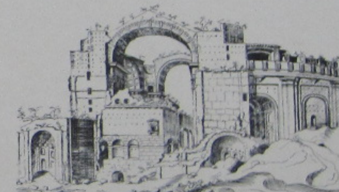
A second drawing, done in 1538 or later (fig. 206), pedantic and not by Heemskerck, although inserted in the Berlin sketchbook (I, f. 15^{r}), confirms and complements the data about the north transept; in the lower part of the end wall instead of a single niche it shows three out of originally five openings: the one furthest west a niche, the next a window filled with tracery, below it, first an inscribed tablet (the Damasus inscription?)[4] and, close to the ground, a round-headed niche or door. Beyond the exedra screen appears in the background the twisted "*colonna santa*". Of the nave the draughtsman saw from the outside the remaining eastern half: the terminating *muro divisorio* of 1538; the clerestory with five large windows filled with tracery, and the beamheads of the truss roof; the thirteenth century cavetto of the façade; and the roof of the two north aisles. Westward, extending towards Bramante's crossing piers,

[1] The pilaster capital lying in the foreground may belong to New St. Peter's.
[2] See also fig. 194.
[3] Above, 176, dig. 1154-1159 and below, 231 ff.
[4] Above, 172, dig. 366-385.



(Berlin, Kupferstichkabinett)

Fig. 206. St. Peter's. Heemskerck follower, Constantinian nave and transept, and crossing of new church, after 1538.



(after Geymüller)

Fig. 207. St. Peter's. H. De Cock (?), Constantinian transept and apse and new structure, from north.

he noted, both north and south and pierced by tall round-headed openings, the walls rising from the arcaded colonnades dividing the inner and outer aisles; the new counterpiers; far back, the obelisk; and in the very foreground, the outer wall of the north aisle pierced by two large openings — hard to explain, like the one seen in Berlin I, f. 13^{r} (fig. 205), but presumably windows.

A *veduta* supposedly by De Cock known only from a tracing of Geymüller's is closely related to the view of 1538 and may well be a variant drawn at home rather than in front of the ruins (fig. 207)[1]. However, we mention it because it shows the north side of the apse with two windows, awkwardly drawn and, more important, on the north face of the transept in the lower part, a design suggesting ashlar work. Did the draughtsman see the remains of

[1] Geymüller, pl. 49, fig. 2.



(Berlin, Kupferstichkabinett)

Fig. 208. St. Peter's. Anonymous, view from south showing Constantinian and new structure, from north, 1554-1555.

ashlar imitation in stucco? Given the unreliability of the drawing in other points, we hesitate to give a positive answer.

One more Heemskerck drawing, Berlin II, f. 54r, presents the building site and the end wall of the Constantinian south transept wing with the adjoining southwest corner (fig. 208): not the outer wall corresponding to the one closest to the viewer in Berlin II, f. 13r, with its oculi fenestration above the cornice, but the wall further back rising from the colonnaded exedra screen. Its position with respect to the counterpiers in the south arm of New St. Peter's, perspective deformation notwithstanding, furnishes the evidence; so do the bracketed cornice below the gable and the window slit piercing it — the small belfry is obviously of late date.



(Florence, Uffizi, G. F. S. G., UA 91)

Fig. 209. St. Peter's. Dosio, new crossing from south, enclosing Bramante's *tegurium* and Constantinian apse, *ca.* 1565.

Two late drawings provide further documentation regarding the apse and the west wall of the transept. A view, sketchy and not very precise, included in the Heemskerck volumes in Berlin II, f. 60r, but done presumably not before 1554-1555, shows the roof and north face of Bramante's *tegurium*, the north side of the apse and, sharply foreshortened, the fragment of the transept rear wall surmounting the apse arch. A view of Dosio's, UA 91 (fig. 209), drawn a few years later, presents the same elements from the south, at closer range, less sketchily, and surmounted by piers, vaults and the drum of the new crossing. The apse is buttressed on the south by a staircase turret lit by windows;

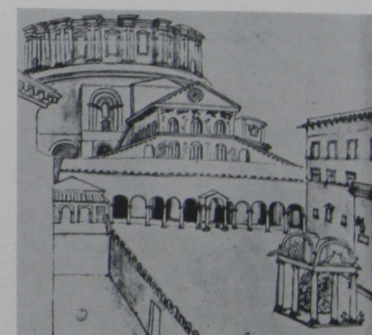
the half-dome is enclosed in a stepped drum; the wall above the apse arch still carries the beam ends of the transept; the south flank of the *tegurium* shows a Doric order, entablature and attic and, inside, one of the twisted vine columns of the screen. Lastly, the Grimaldi *Album*, f. 20r (fig. 210), provides evidence regarding place, size and shape — squarish with low segmental termination — of the aisle windows.



(Bibl. Vat. Arch. S. Pietro, Album)

Fig. 210. St. Peter's. Tasselli, Constantinian north aisle wall elevation, *ca.* 1611.

Atrium and façade, as they stood until 1608, are best shown in a famous Dosio drawing, UA 2555 (fig. 211)[1]. The façade, rebuilt and provided with a new mosaic by Gregory IX, terminated in a huge cavetto moulding; a solution characteristic of high medieval church façades in Rome. The nave front was pierced by two tiers of large windows, all filled with tripartite tracery; the aisle roofs extended far down and each half-gable was pierced near its upper end by an opening. Of the atrium only the center area with the Pigna under the Cantharus and the west portico, the narthex, had survived, opened in eleven arcades on columns and a projecting porch in the center; the porticoes north and south had given way, the former to the palace of Innocent VIII, built in 1485, and housing the *rota* and the *penitenzieri*; the latter to the house of the *altarista* with a chapel installed by Julius II and to a crenellated wall, its door leading to the palace of the archpresbyter. In the open area rises the Cantharus, the Pigna and its baldacchino: one sees the supporting porphyry columns, five out of eight[2], with plinths, bases and Ionic capitals; the entablature; the semicircular grills, apparently window grills; the dolphins at the corners; and a pair of peacocks in front of the eastern grill. The griffin plaques, enclosing the Pigna until 1574 are gone; nor is there any trace left of the bronze roof, still noted (or restored) in their drawings by Cronaca and Francisco



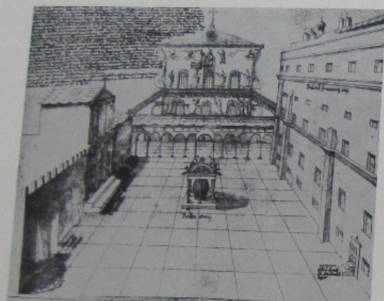
(formerly, Florence, Uffizi, UA 2555 after Egger, Veduten)

Fig. 211. St. Peter's. Dosio, Constantinian nave and atrium, and new structures from east.

[1] Lost since 1939.

[2] Helbig, *Führer durch die öffentlichen Sammlungen klassischer Altertümer in Rom*, ed. H. Speier, I, Tübingen, 1963, no. 478, gives the number of columns as nine.

d'Ollanda. The schematic representation of the atrium by Tasselli in the *Album* and the copy in Grimaldi Barb. lat. 2733, c. 133r[1], confirm and supplement the situation (fig. 212). The oratory of the Confraternity of the Most Holy Sacrament was attached to the south flank of the atrium at the time of Gregory XIII. Volutes were added to the nave façade sometime after Dosio did his drawing and before 1608. The cavetto termination of the façade appears time and again in views, e.g. in a drawing, allegedly in the Vatican, taken by an anonymous Dutch artist across the roofs of the Borgo[2].



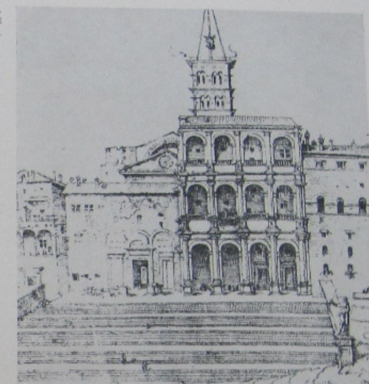
(Bibl. Vat., Arch. S. Pietro, Album)

Fig. 212. St. Peter's. Tasselli, basilica façade and atrium, *ca.* 1611.

On the other hand, it remains in doubt whether the façade of the atrium and the gatehouse, S. Maria in Turri, as seen in the sixteenth century went back to Constantinian times or were, even in their early parts, the result of an eighth century rebuilding. Heemskerck's drawing in Vienna (fig. 213)[3] shows the situation as of 1532-1535: to the north the complex of the Vatican palaces, at the far south edge the house of the archpresbyter, in between a flight of stairs ascending in five stages to the upper landing (the stairs, built by Pius II, originally had 35 steps); on the upper landing to the right, the Loggia di Benedizione begun under Paul II but never completed, as witness the row of pedestals continuing south; behind it the gatehouse, S. Maria in Turri. Its three doors in fifteenth century frames are surmounted by wall arches, part of a lost vaulted porch; to the right of the center door appears a slender column; high up, the remains of the mosaic donated by Paul I, see the inscription copied by Grimaldi. Further back rises the top of the nave façade with cavetto moulding and gable (around 1550 a false façade, colonnaded and surmounted by an entablature and a pedimented attic carrying figures was placed around the three gates, as witness a Chatsworth drawing by a follower of Heemskerck). The gatehouse façade shows far better in Grimaldi's Barb. lat. 2733, f. 152v-153r (fig. 214), with four Ionic columns between the doors surmounted by the inscribed entablature, which in turn carries the upper storey with its mosaic. However, given the deterioration of the mosaic as early as 1532-1535, Grimaldi's view is obviously a reconstruction.

[1] GRIMALDI, *Descrizione*, 164 f., fig. 63.
[2] EGGER, *Veduten*, I, 24 and pl. [illegible]; it cannot be traced at this point in the Vatican Library.
[3] Formerly in the Hofbibliothek (HUELSEN-EGGER, *Heemskerck*, 18 ff., pl. 130), now in the Albertina.

Fig. 213. St. Peter's. Heemskerck, façade Constantinian atrium and loggia of Paul II, detail, *ca.* 1532-35.



(Vienna, Albertina; after Egger-Hülsen, Heemskerck)

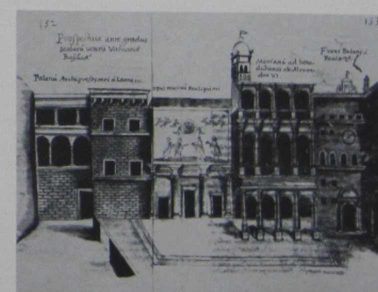


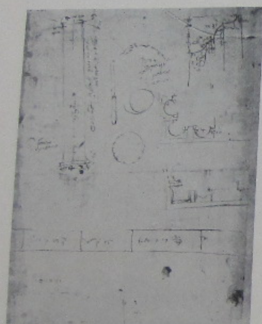
Fig. 214. St. Peter's. Copy after Tasselli, façade of gatehouse.

(Bibl. Vat., Barb. lat. 2733)

d) SURVEYS OF DETAILS

Details of the Constantinian building are further recorded in a number of drawings. Outstanding among these are four by or connected with Baldassare Peruzzi.

The column with plinth, base, capital, architrave, frieze, and measurements on UA 120r (fig. 197) has been discussed, and we only call to mind the level of the soffit of the entablature, $48^{1}/_{2}$ *palmi* above original floor level. Of the column shaft next to this sketch, likewise in ink, drawn on a larger scale, Peruzzi noted the material, granite, the length, $39^{1}/_{2}$ *palmi*, the lower and upper diameters, $5^{1}/_{2}$ and 4.2.2 *palmi* respectively, the necking and the position previously discussed, "on the ground, near the organ"[1]. In black chalk and thus hard to see in reproduction, he added the outline of the capital and its height, $5.8.2^{1}/_{2}$ *palmi*. The measurements are closest to column fourteen in the north colonnade, one of those removed in 1524-27 to make room for the counterpier. But witness the figures given in UA 108r (see our table, below p. 234), that column was of *cipollino*, its shaft was 39.6.3 *palmi* (a tiny difference, to be sure), its diameter, $4.8.2^{1}/_{2}$; and column shafts thirteen and fifteen, other candidates, differ further still, both in length and diameter. Somewhere Peruzzi made a mistake in notation — are the figures $4.8.2^{1}/_{2}$ and $5.8.2.^{1}/_{2}$ sheer coincidence? UA 130v (fig. 215), likewise by Peruzzi, and marked "*in santo pietro*" gives further details of the colonnades: a shaft, 40 *palmi* long, with precise notations as to lower diameter ($4^{7}/_{8}$ *palmi*), projection and height of apophyge, upper diameter (4.10 *palmi*) and projection and height of necking; below, the outline of a cable-fluted column; and what may be the sketch of pieces of an entablature.



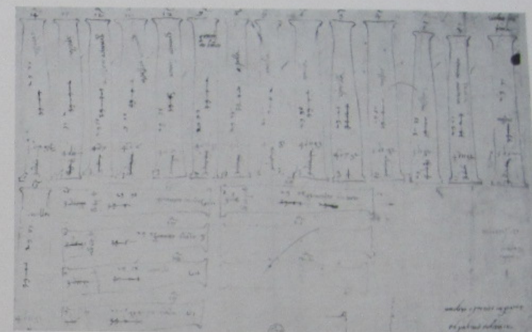
(Firenze, Uffizi, G.F.S.G., UA 130v)

Fig. 215. St. Peter's. B. Peruzzi, Constantinian basilica, details of nave colonnade, and entablature (?) and corner of *tegurium*, *ca.* 1524.

UA 108 recto and verso[2] provide a complete survey of the column shafts. On the recto, twenty-two shafts from the north colonnade ("*prima volto sco*", the altar of the Volto Santo being in the outer aisle to the north near the façade) are sketched (fig. 216) and of the first twenty, the length of the shaft, its diameter, the height, the position and the material of the shafts are noted, the measurements in *palmi*, *dita* and *grani*, all notations in brown ink now faded and with a broad quill. Later, in a different hand and in black ink, the measurements were cancelled and replaced by a new system of measurements, apparently *piedi* divided into 100 or possibly 96 *minuti*. (The reason why columns 21 and 22 were not measured and described remains unknown). On the verso (fig. 217), correspondingly, the columns in the south colonnade of the nave are sketched with the same indications and the same cancellations; moreover, the

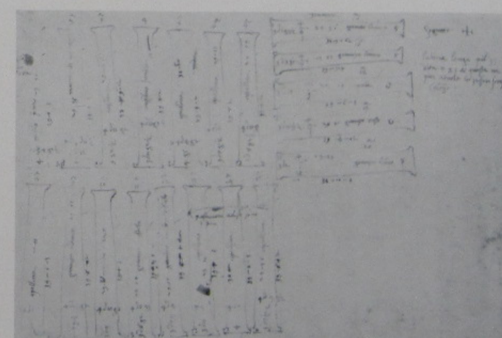
[1] See also above, 224 and fig. 202.

[2] UA 1079v by G. B. da Sangallo (il Gobbo) is a copy of 108r, as 1079r is a copy of 108v. 1083 is another copy of 108r, showing on the verso, columns 1-10 and on the recto, 11-20. 1084 recto and verso are other copies.



(Firenze, Uffizi, G. F. S. G., UA 108r)

Fig. 216. St. Peter's. B. Peruzzi, survey of columns of Constantinian nave, north colonnade, 1524-27.



(Firenze, Uffizi, G. F. S. G., UA 108v)

Fig. 217. St. Peter's. B. Peruzzi, survey of columns of Constantinian nave, south colonnade, 1524-27.

second hand, apparently Antonio da Sangallo the Younger's, in black ink notes that columns 13-15 "now still standing" are to be taken down, apparently to make room for the counterpier. Hence the drawing was made in 1524-27. The vast differences in materials and measurements throughout show that all shafts were spoils and that plinths, bases, and capitals had to be adjusted to reach the overall level of the soffit of the entablature. We reproduce the tabulations and their recalculation in the metric system, made for 108^{r} by Jongkees[1] and for 108^{v} by the authors:

NAVE COLUMNS, ACCORDING TO PERUZZI AND SANGALLO
(UFFIZI A. 108 recto, 1083 recto and verso, 1084 recto)

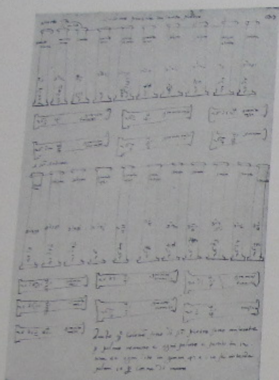
	Height (*palmi*)	Height (*piedi*)	Diameter *palmi*	Diameter *piedi*
1. *Mistio*	39.6?.1 8.82 m	29.90 8.82 m	5.5.0 1.22 m	3.9.? 1.11+m
2. *Marmo venato*	39.2.3 8.75 m	29.67 8.75 m	4.11.2 1.10 m	3.6.0 1.04 m
3. *Mistio*	39.10.0 8.89 m	30.35 8.95 m	5.1.2 1.14 m	4.1.1 1.22 m
4. *Mistio*	39.5.0 8.79 m	29.80 8.79 m	5.1.2 1.14 m	3.8.1 1.09 m
5. *Cipollina*	38.8.3 8.64 m	29.25 8.63 m	4.7.2 1.03 m	3.0.0 0.89 m
6. *Cipollina*	39.7?.1 8.83 m	29.90 8.82 m	4.11.3 1.11 m	3.10.2 1.15 m
7. *Cipollina*	39.4.2 8.78 m	29.75 8.78 m	4.10?.1 1.08 m	3.7.3 1.07 m
8. *Cipollina*	39.4.2 8.78 m	29.73 8.77 m	4.8?.0 1.04 m	3.7.3 1.07 m
9. *Granito biancho*	39.5.0 8.79 m	29.79 8.79 m	4.8.1 1.04 m	3.4.3 0.99 m
10. *Granito biancho*	39.? 8.70+ m	29.78 8.79 m	4.7.0 1.02 m	3.8?.1 1.09 m
11. *Granito rosetto*	39.4.1 8.78 m	29.78 8.79 m	4.6.0 1.00 m	3.7.2 1.06 m
12. *Granito rosetto*	39.3.3 8.77 m	29.78 8.79 m	4.7.0 1.02 m	3.7.0 1.05 m
13. *Cipolla*	39.9.1 8.89 m	30.2 8.91 m	4.10.0 1.08 m	4.0.1½ 0.90 m
14. *Cipolla*	39.6.3 8.83 m	29.87 8.81 m	4.8.2½ 1.05 m	3.10.0 1.14 m
15. *Cipolla*	39.4.1 8.78 m	29.85 8.81 m	4.11.2 1.10 m	3.7?.2 1.06 m
16. *Granito bianco*	39.8.0 8.85 m	29.98 8.84 m	4.9.1 1.06 m	3.11.1 1.16 m
17. *Granito bianco*	39.5.0 8.79 m	29.80 8.79 m	4.9.2 1.07 m	3.8?.1 1.09 m
18. *Cipolla*	39.8.1 8.85 m	29.78 8.79 m	4.9.2 1.07 m	3.11.2 1.17 m
19. *Granito bianco*	39.2.3 8.75 m	29.78 8.79 m	4.8.0 1.04 m	3.6.0 1.04 m
20. *Granito bianco*	39.4.3 8.79 m	29.78 8.79 m	4.10.1 1.08 m	3.8.0 1.08 m

[1] Jongkees, 26 f., with minor corrections of ours.

NAVE COLUMNS FROM THE SOUTH COLONNADE, UFF. 108^{v}.

	Height (*palmi*)	Height (*piedi*)	Diameter *palmi*	Diameter *piedi*
1. *Mistio*	39.8.3 8.86 m	29.90 8.86 m	5.4.2½ 1.20 m	4 1.19 m
2. *Marmo di due pezzi*	39.7.3 8.84 m	29.95 8.84 m	4.11½ 1.10 m	3.11/12 1.165 m
3. *Mischio*	39.9.1½ 8.65 m	29.36 8.65 m	4.11.2 1.10 m	3.0.2½ 0.90 m
4. *Mistio simile*	39.8½ (?) 8.85 m	30.00 8.85 m	4.11.1½ 1.10 m	3.11.2½ 1.18 m
5. *Cipollina*	39.8.2 (?) 8.85 m	30.4 (?)[1] 8.85 m	4.8.2 1.05 m	4.0.5 1.20 m
6. *Cipollina*	39.6.1½ 8.82 m	29.73 8.82 m	5.1 1.13 m	3.7.1½ 1.07 m
7. *Cipollina*	39.5.1½ 8.80 m	29.79 8.80 m	4.11.1 1.10 m	3.8.2½ 1.09 m
8. *Cipollina*	39.6.3 8.82 m	29.88 8.82 m	5.1 1.13 m	? (illegible)
9. *Granito bianco*	39.6.½ 8.81 m	29.88 8.81 m	4.4.2 0.98 m	3.9.1½(?) 1.10 m
10. *Granito bianco*	39.4.3 8.78 m	29.77 8.78 m	4.10.1 1.08 m	3.8 1.08 m
11. *Granito rossetto*	39.2.5 8.76 m	29.74 8.76 m	4.8.3 1.05 m	3.6.2 1.03 m
12.	39.4 8.77 m	29.75 8.77 m	4.8 1.04 m	3.7.1 1.04 m
13. *Cipollina*[2]	49.5(?).3 8.80 m	29.94 8.80 m	5.0 1.11 m	3.11 1.17 m
14. *Cipollina*	39.8.3 8.86 m	30.0 8.86 m	4.9 1.16 m	4 1.19 m
15. *Cipollina*	39.5.1½ 8.80 m	29.86 8.80 m	4.9.½ 1.06 m	3.9.2½ 1.11 m
16. *Granito bianco*	38.9.6½[3] 8.67 m	29.36 8.67 m	4.8 1.04 m	3.1.3½ 0.91 m
17. *Granito bianco*	39.5.4 8.81 m	29.85 8.81 m	4.9 1.06 m	3.9.1 1.11 m
18. *Cipolla*	39.6.3 8.82 m	29.78 8.82 m	4.9.1 1.06 m	3.10 1.13 m
19. *Granito rosso*	38.4.4½[4] 8.57 m	28.80 8.57 m	4.7 1.02 m	3.8.1½ 1.08 m
20. *Granito bianco*	38.10.3 8.67 m	29.37 8.67 m	4.2.1 0.93 m	3.2 0.92 m

[1] The figure 29 (?).2 is also included.
[2] Columns 13, 14 and 15 *dallevare, adesso in pie*.
[3] *sic.*
[4] *sic.*



(Vienna, Oesterreichische Nationalbibliothek)

Fig. 218. St. Peter's. Anonymous, after B. Peruzzi (?), survey of Constantinian aisle columns.

An anonymous drawing, published by Christern, at the Oesterreichische Nationalbibliothek, formerly Stadtbibliothek, Vienna (fig. 218), possibly copied from a lost Peruzzi drawing, similarly renders 34 columns from the aisles, "*colone pichole in santo pietro*", 16 to the north ("*volto santo*"), and 18 to the south ("*S. Andrea*"), again with complete notations giving length, diameter and materials of the shafts. Other surveys of the aisle columns, arranged by material, are given in UA 1851, 1082 and 1080. We tabulate on p. 237 the measurements of the columns in the Vienna drawing, comparing them with those on the Uffizi drawings and giving the metric calculations published by Jongkees[1]. Since, however, out of the original 44 aisle columns, the Uffizi drawings reproduce only 32, and the Vienna drawing 34, the comparison must remain incomplete[2].

Two drawings by Fra Giocondo showing column shafts from the nave and aisles, while measured, are not quite as serviceable for the reconstruction since their positions in the colonnades are not indicated. For the same reason a number of detail drawings, showing cornices, a base and a Composite capital from Old St. Peter's, by (or attributed to) Fra Giocondo, Bastiano da Sangallo, Gianbattista da Sangallo (il Gobbo), Sansovino, the Coner draughtsman, Sallustio Peruzzi and Dosio, are of limited value in our context. But they show that, like the column shafts

[1] Jongkees, 27.

[2] The following columns do not match any of those on the Vienna drawing:

	Height	Diameter
From UA 1851		
9. *Granito bianco*	26.7	3.1
	5.93 m.	68.9 cm.
12. *Granito bianco*	26.3	3.1 1/2
	5.86 m.	69.8 cm.
From UA 1082		
3. *Striata*	26.4	3.3.2 1/2
	5.87 m.	73.8 cm.
7. *Rosso di granito*	26	2.7 1/2
	5.80 m.	58.5 cm.
8. *Rosso di granito*	26.7	3.3
	5.93 m.	72.6 cm.
From UA 1080		
4. *Rosso*	26	3.3
	5.80 m.	72.6 cm.
7. *Striata*	26.6	3.8
	5.91 m.	81.9 cm.

Aisle columns from the north, from the "volto santo"

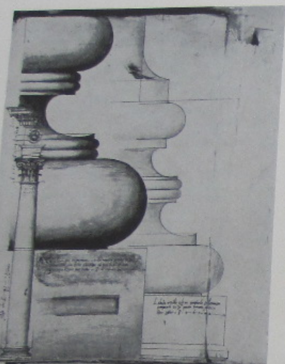
No.	Vienna, Oesterreichische Nationalbibliothek: Height (in *palmi*, *dita*, and *grani*)	Diameter	Material	UA 1080, 1082, 1851: Uffizi No.[1]	Height (in meters)	Diameter (in meters)
1.	26.3	3 1/4	*granito bianco*			
2.	26.4 1/2	3.2 1/2	*marmo striato*	1082 (4)	5.88 m.	71.6 cm.
3.	26 1/2	3. 2/3	*striato*	1082 (10)	5.91 m.	80.9 cm.
4.	26	3.3 1/2	*granito rosso*			
5.	26.5.1	3.2.3	*granito roseo*	1080 (5)	5.90 m.	72.1 cm.
6.	25 1/2	2.7	*granito roseo*	1080 (6)?	5.67 m.	57.6 cm.
7.	26 1/2	3.3 1/2	*saligno*	1080 (8)?	5.91 m.	70.7 cm.
8.	25 2/3	3.2 1/2	*saligno*	1080 (9)?	5.95 m.	70.7 cm.
9.	27.7	3 1/3	*saligno striato*	1082 (1)	6.15 m.	74.4 cm.
10.	27.7	3.3.1	*saligno striato*	1082 (2)	6.15 m.	73.1 cm.
11.	26 1/3	3	*granito bianco*	1851 (7)	5.87	67.0 cm.
12.	26.2	3.7	*granito bianco*	1851 (8)	5.84 m.	68.9 cm.
13.	26 1/2	3 1/3	*granito rosso*	1851 (2)	5.91 m.	74.4 cm.
14.	26 2/3	3.3.3	*granito rosso*	1851 (1)	5.95 m.	74.0 cm.
15.	26.1	3 1/3	*granito rosso*	1851 (3)	5.82 m.	74.4 cm.
16.	26 2/3	3.3. 1/2	*striata*			

Aisle columns from the south, from "S. Andrea"

No.	Vienna, Oesterreichische Nationalbibliothek: Height	Diameter (in *palmi*, *dita*, and *grani*)	Material	UA 1080, 1082, 1851: Uffizi No.[2]	Height (in meters)	Diameter (in meters)
1.	27.9	3.3.3	*striata*	1080 (1)	6.19 m.	74.0 cm.
2.	25.3 1/2	3.3.3	*saligna*	1080 (2)	5.67 m.	74.0 cm.
3.	25.3 1/3	3.4.1	*saligna*	1080 (3)	5.63 m.	74.9 cm.
4.	26	2.7 1/3	*granito rosso*			
5.	26.7	2 2/3	*granito rosso*	1082 (9)	5.93 m.	59.5 cm.
6.	26 (?)	3 1/4	*granito rosso*			
7.	26 1/2	3.7 1/2	*striata*	1082 (10)	5.91 m.	80.9 cm.
8.	26 2/3	3. 2/3	*striata*	1082 (11)	5.95 m.	81.9 cm.
9.	26.9	3.7.2 1/2	*striata*			
10.	26.7	3.1 1/2	*striata*	1082 (5)	5.93 m.	69.8 cm.
11.	26 1/3	3 1/3	*striata*	1082 (6)	5.87 m.	74.4 cm.
12.	26.6.1	3.3.3	*granito rosso*	1851 (4)	5.92 m.	74.0 cm.
13.	26.6.1	3.5. 1/2	*granito rosso*	1851 (5)?	5.92 m.	73.5 cm.
14.	26.1. 1/2	3 1/3	*granito rosso*	1851 (6)	5.83 m.	74.4 cm.
15.	26.7	3.1	*granito bianco*			
16.	26 2/3	3.1	*granito bianco*	1851 (10) ?	5.95 m.	68.9 cm.
17.	26.1	3.2	*granito bianco*			
18.	26. 1/2	3.3	*mischio*	1851 (11)	5.82 m.	70.7 cm.

[1] The number in parentheses is the number of the column on the drawing.

[2] *Idem.*



(Rome, Gab. Naz. Stampe)

Fig. 219. St. Peter's. Cherubino Alberti, Constantinian nave column, base and entablature, *ca.* 1570.

in the Constantinian basilica, many of the bases and most of the capitals and the pieces of entablature were spoils. Only a drawing attributed to Cherubino Alberti and discovered by Christern contributes materially to our knowledge of the Constantinian nave (fig. 219).

So much for the graphic evidence. The representations of the Constantinian church, such as the interior views of Fouquet (fig. 200), Giulio Romano, (fig. 221) and others, give an idealized picture and eliminate the irregularities of the design, particularly in the colonnades, their capitals and trabeations.

Fig. 220. St. Peter's. Heemskerck, view from south, showing Constantinian atrium and nave and, to left, obelisk of Circus, rotunda and New St. Peter's, *ca.* 1532-36.



(Berlin, Kupferstichkabinett)



(Vatican, Sala di Costantino)

Fig. 221. St. Peter's. Giulio Romano, interior of Constantinian basilica, reconstruction, *ca.* 1520.

But at least Giulio Romano's fresco conveys an idea of the monumentality of the building, the heaviness of the columns, the narrowness of the intercolumniations and the hugeness of the proportions (fig. 221). Similarly the exterior by Heemskerck, Berlin II, f. 51ʳ (fig. 220), while sketchy, conveys an idea of the vast size of the Constantinian complex: the pre-Constantinian rotunda and obelisk; the remaining east part of the nave, the westward portico of the atrium, separated from the south aisle by a fissure and hence probably not Constantinian; the long atrium; finally, barely hinted at, the atrium façade, the landing and the ascending steps — the whole nearly as long as New St. Peter's.

F. RECONSTRUCTION

Much of the demolished Constantinian basilica can be reconstructed with considerable assurance on the evidence presented in the previous sections. Some elements may be restored only tentatively, and others remain completely in the dark. This section will review the primary and secondary sources for the building's restoration and the prior scholarship on this problem. It will present a synthesis of this evidence and scholarship in an attempt to embody all that is known or can logically be inferred about the church at this time. The presentation is divided

into two major discussions, that of the church proper and that of the atrium. Each will begin with those elements about which the most reliable evidence exists and will proceed to those concerning which statements must be made with progressive caution.

1. The Church

Evidence for the form of the Constantinian basilica is in most respects more abundant and more reliable than that for the early form of the atrium.

a) The plan (pl. V)

1. *The width of the nave and aisles*

No clear direct measurement of the nave's width can be made. The state of the monument's preservation also is such that no calculated dimension can be proposed with absolute certainty. The calculation must be based upon an assumption of symmetry about a center-line whose position cannot be established without reservation. The assumption of symmetry, moreover, must be extended to the position of columns and exterior walls with respect to their foundations, unless clearly indicated otherwise.

The calculation of the nave's width depends on the correlation of the data provided by: *a)* the preserved stretch of the northern exterior wall, the pedestal and base of the eleventh column of the northern arcade, and the base and plinth of the eleventh column of the northern colonnade preserved in the *muro divisorio* and the sixteenth century portal in that wall which is presumed to lie on the central axis of the basilica; and by *b)* the preserved foundation walls of the southern outer wall and of the southern arcade and colonnade. Some individual dimensions for these elements are given in the excavation report, but not in a comprehensive, sequential manner. Written dimensions are not given on the elevation of the northern half of the *muro divisorio* or the cross-section through the foundations [1]. Dimensions taken from the graphic scales provided lack precision due to the small scale at which the drawings are reproduced.

Direct measurements have been taken from the center-line of the major portal of the *muro divisorio* to the inner, plastered face of the northern exterior wall. The result is 31.57 m.; the scaled dimension from the plan in the excavation report is 31.50 m. The increments of the dimension we have measured are:

From portal center to the south face of the plinth of the column in the northern colonnade	11.77 m.
Width of the plinth	1.61 m.
Width of the inner aisle from the northern face of plinth to the southern face of the pedestal of the northern arcade column	8.44 m.
Width of the pedestal	1.09 m.
Width of the outer aisle from the northern face of the pedestal to the inner, plastered face of the northern exterior wall	8.66 m.

The interaxial width of the inner aisle, i.e., from column center to column center is 9.83 m., 44 *palmi*, or *ca.* 33¹/₄ R. ft., and the width of the outer aisle from the center of the arcade column to the inner face of the northern outer wall is 9.21 m., 41¹/₅ *palmi*, or *ca.* 31 R. ft. The clear

[1] *Esplorazioni*, II, pl. CIX.

widths from plinth to pedestal and from pedestal to wall are close to the 38 and 39 *palmi*, said to have been the widths of the inner and outer aisles by Alfarano, 8.44 and 8.49 m., and 8.66 and 8.71 m. respectively. Assuming Alfarano simplified his dimensions to the nearest *palmo*, his measurements are correct. It is important to recognize that his concern was for clear widths taken near the ground-line at the most convenient vertical surface, i.e., on the faces of the plinths and pedestals and not on the more difficult faces of the columns.

This observation gains confirmation when the distance between the center of the sixteenth century portal and the south face of the northern column plinth is considered. If doubled, the resulting calculated width of the nave would be 23.54 m. or 14 cm. less than the 106 *palmi*, 23.68 m., Alfarano ascribed to this width. This is again a clear width taken near the ground-line. Since the plinths were *spolia* or were cut to suit bases that were, the corresponding plinth below the opposite column of the southern colonnade may have differed somewhat in width from the one we measured. The slight difference between our calculated width and Alfarano's round 106 *palmi* may thus be accounted for. Both figures are at slight variance with the corresponding measurement scaled from UA 121^r, the cross-section of the central nave showing the projected *muro divisorio*. Using the graphic scale with which the drawing is provided, Christern determined that it showed the interaxial rather than the clear width of the nave as 106 *palmi*, i.e., the distance between the column centers and those of the clerestory walls above. In support of this thesis, it may be argued that Sangallo's measurement was made of a standing building by a competent architect and the contradictory figure is calculated from a center-line whose validity is not beyond question. But three considerations weigh against this argument. First, the clear dimensions of the northern aisles that we have read directly correspond with sufficient closeness to those given by Alfarano to demonstrate that his method was to measure such clear rather than axial distances. Hence, following his observed procedure, we calculate a clear nave width that is too close to Alfarano's to be merely fortuitous. And second, UA 121^r is a finished work in pen and wash, obviously made in the drafting room, although doubtlessly from field notes. Elsewhere in his study Christern has preferred the field sketches with written dimensions of the basilica's order made by Peruzzi and Sangallo to those of a finished drawing by Cherubino Alberti. This appears to be a sound principle. Third, the drawing's graphic scale is so small that precise readings are difficult to make from it. By our reading, however, the scale of the drawing is one *palmo*: 2.85 mm., and the clear width of the nave therefore is 104¹/₄ the axial width 108³/₄ *palmi*. But we cannot propose these figures with any assurance.

It is tempting to calculate the clear width of the entire nave and aisles simply by doubling the distance derived from the center-line of the portal in the *muro divisorio* and the inner face of the northern outer wall, i.e., 2×31.57 m. or 63.14 m. This is 282³/₄ *palmi* rather than the 285 given by Alfarano or the 284 given by Peruzzi. The examination of the evidence provided by foundations in the southern half of the nave does not support this procedure.

The only direct measurements of the southern foundation walls that can now be read are the width of the outer foundation wall, 2.68 m., the clear distance between its inner face and the southern face of the arcade foundation, 7.53 m., and the distance from that face to the southern face of the nave colonnade foundation, 10.17 m. The northern face of the arcade is now buried in the new wall constructed to separate Halls II and III of the exhibition rooms to the south of the Grotte Vecchie. The excavators, however, gave its width as equal to that of the outer foundation [1]. There is no reason to doubt this, and the clear space between that

[1] *Esplorazioni* I, 151.

foundation and the southern face of the colonnade foundation is 7.49 m. or 4 cm. less than the space between the outer foundation and the arcade foundation. Assumption becomes a critical factor in the computation of the original clear width of the nave at this point. To the south only the foundations survive, but at the north, where the bases of the nave and aisle columns and a stretch of the exterior wall remain *in situ*, the foundations are not visible nor subject to measurement. This situation requires the assumption that the southern wall and columns were coaxial with their foundations and that the southern wall was equal in width to its northern counterpart. Were this the case, the distance between the inner face of the southern wall and the center-line of the arcade would be 9.46 m. and the distance between the latter and the center-line of the southern colonnade of the nave would be 9.78 m. The interaxial width of the northern inner aisle is 9.79 m., only 1 cm. greater than the dimension calculated for the corresponding southern aisle. But the distance from the center of the northern arcade to the face of the northern wall, 9.21 m., is 28.5 cm. less than its corresponding southern dimension resulting from our calculations. This difference cannot be explained by the use of *spolia* as it relates to Constantinian construction. The combined dimensions of the aisles in the southern half of the nave are 19.27 m. and those in the northern half are 19.00 m., a difference of 27 cm.

It may be that such a difference did exist between the widths of the northern and southern side aisles. Its acceptance produces a clear nave width of 63.42 m. or $283\frac{4}{5}$ *palmi* which is close to the 284 recorded by Peruzzi. Before accepting this dimension, however, it should be noted that the major discrepancy is that between the widths of the outer aisles where the difference of 28.5 cm. is sufficiently close to a Roman foot of 29.56 cm. to merit attention. This increase occurs when the southern wall is assumed to have been coaxial with its foundations and equal in width to that of the northern wall. It may be that the wall was shifted inward on its foundation by one foot for static reasons. The foundation, rising in the clear on its southern face and containing a prodigious fill against its northern face, was the tallest in the building. Perhaps its builders thought that the inward shift of the superstructure wall was a prudent means of insuring its stability on so unequally abutted a foundation. Alternatively, the wall could have been constructed a foot thicker internally than its northern counterpart for the same reason. There is ample evidence elsewhere in the building that walls varied in width according to their structural positions. In either of these hypothetical cases the inner width would have been 63.12 m. or $282\frac{1}{2}$ *palmi*. The solution to the problem lies in the width of the transept, since the outer faces of its northern and southern walls were coplanar with those of the nave.

2. *The width of the transept*

The extent of direct measurement is even more limited in the transept than it is across the nave. It is impossible to read any major increments — its northern arm, the apse, and the southern arm — in the clear. The Vatican excavators gave the length of the west wall of the southern arm excluding the exedra as 23 m.[1]. Replastering of the semi-annular corridor of the Confessio and of the Constantinian apse, internally lined by the masonry of Gregory the Great's annular crypt, prevents the reading of this distance with the same precision as the excavators could. Measuring in increments through the space beneath the present transept, the Cappella della Madonna delle Partorienti, the Cappella della Bocciata and the corridor has produced

[1] *Esplorazioni*, I, 157.

a dimension of 23.425 m. from the face of the pier at the southern exedra to the inner plastered face of the lined and plastered Constantinian apse wall. The Vatican excavators were able to measure the thickness of the Gregorian lining of the apse as 34 cm.[1]. Subtracting this from the measurements taken produces a length of 23.085 m., from which at least a further 2 or 3 cm. should be removed for the plaster coating. The clear dimension of the west wall of the south arm of the transept must be, therefore, the 23 m. stated by the excavators or a few centimeters more; but no more than 23.05 m.

The excavators have not provided a specific width for the Constantinian apse. The graphically scaled dimensions from the largest plan they reproduce is *ca.* 17.80-85 m.[2]. Apparently their survey confirmed the 80 *palmi*, 17.87 m., recorded by Alfarano, or else they accepted it because of the reliability of his dimensions observed elsewhere. They stated that the length of the northern arm, like that of the southern, was approximately 23 m., but that it could not be measured with as much precision[3]. This is even truer today, and one must rely on symmetry. Applying this principle produces the following result:

The northern and southern arms of the western transept wall, 2 × 23 m.	46.00 m.
The width of the apse	17.87 m.
The width of the two wall piers at either transept exedra, 2 × 1.28 m.	2.56 m.
The transept from the outer face of the northern to the outer face of the southern wall	66.43 m.

The corresponding width of the nave is 63.42 m. plus twice the thickness of the northern outer wall — 3 m. — which is 66.42 m. The coincidence of these two dimensions, achieved through different and unrelated means, is remarkable, and we propose that the two major elements of the Constantinian church were each 66.42-43 m. wide. This is $297\frac{1}{3}$ *palmi* or *ca.* 225 R. ft., 66.49 m. The clear inner width of the nave and aisles is consequently $283\frac{9}{10}$ *palmi*, almost exactly the 284 *palmi* given by Peruzzi for its width.

3. *The depth of the apse and of the transept exedrae*

Alfarano must suffice as a source for the depth of the apse. He recorded it as 44 *palmi* or 4 *palmi* deeper than its radius of 40 *palmi*. The difference is 89 cm. or 3 R. ft. The Vatican excavators record the thickness of the western wall of the transept near the springing of the apse as 1.70 m. and that of the apse itself as 1.72 m.[4]. Alfarano must have measured the width of the apse at its face and the depth at a line perpendicular to that face. It thus appears that the Constantinian builders swung the semicircle of the apse from a line 3 R. ft. west of the inner face of the transept wall which is more or less on its center-line.

The apse did not directly abut the outer face of the western wall of the transept, if the evidence of UA 20, Alfarano's plan, and Dosio's view of the *tegurium* and apse, UA 91, is to be believed (figs. 193, 195, 209). In detail, the evidence is ambiguous. UA 20, the only source predating the beginning of the destruction of the old church, shows two masonry masses resembling wall buttresses at the re-entrant corners of the junction of the apse and the transept[5] (fig. 193). The southern mass measures *ca.* 23 *palmi* wide and 17 *palmi* deep; the smaller,

[1] *Esplorazioni* I, 175.
[2] *Ibid.*, fig. 123.
[3] *Ibid.*, 157.
[4] *Ibid.*, I, 155 f.
[5] We are indebted to Slobodan Ćurčić, who in a seminar report analyzed the problem posed by the evidence for the two masonry masses. We have accepted his conclusions which we present here in abbreviated form.

northern mass is *ca.* 20 by 15 *palmi* wide. There is a suggestion of a wall, *ca.* 4 *palmi* thick, at the northern mass. Alfarano's plan (fig. 195) shows only the southern mass and it appears as a stair tower of approximately the size shown on UA 20.

The existence of the southern mass is confirmed by Dosio's drawing where it appears unmistakably in the re-entrant corner (fig. 209). A rectangular opening shows in its southern face somewhat above the line of the apse windows. The opening is large enough to have been an access door and it is further evidence that the southern mass was a stair tower. The door perhaps communicated with a wooden balcony along the southwestern wall of the transept for the maintenance of the windows by analogy with those at the Aula Palatina at Trier [1]. The tower stopped short of the top of the transept wall, but continued to the roof of the apse which might have been reached from a door in the invisible western face of the tower. Access to the roof of the transept might have been gained across the apse roof. The possibility of such communication is important as a comparable stairway at the northern flank, despite the evidence of UA 20, apparently never existed. That part of the transept wall was the only area of the wall, both faces of which the Vatican excavators were able to examine. Their report does not mention finding any evidence of an interior corner tower. From this one would conclude that the author of UA 20 carelessly obeyed the principle of symmetry in sketching in the northern tower, but this does not explain why he drew the northern tower smaller than the southern tower. The conclusions reached fall short of total satisfaction, therefore, and must be presented tentatively.

Our direct measurement of 10.76 m. or 48$^{1}/_{2}$ *palmi* contradicts the 44 *palmi* said by Alfarano to have been the depth of the exedras. The source of his error cannot be determined. He gave the depth of the transept as 78 *palmi*. The face of the pier projecting from the western wall of the transept at the northern exedra, the opening between it and the plinth of the western of the two columns between the transept and the exedra, and the width of the plinth have been measured directly as 1.82 m., 3.67 m., and 1.21 m., 6, 12 and 4 R. ft. Assuming symmetry, the clear depth of the transept would be 17.07 m. or 76$^{1}/_{2}$ *palmi*, 1$^{1}/_{2}$ *palmi* less than Alfarano's figure. Were he correct, however, the correlation of his depth with the measured data would produce a central bay in the colonnade 33.4 cm. wider than the two lateral bays. That such was the case is supported, although not proven, by Heemskerck's Stockholm drawing in which the central bay appears wider than the flanking bays. We accept tentatively a depth of *ca.* 78 *palmi*, 17.39 m. or 58$^{1}/_{2}$ R. ft. The western wall of the transept, as reported above, varied from 1.70 m. near the apse opening to 1.65 m. near the pier at the northern exedra. Nothing is known of the thickness of the eastern wall from archaeological evidence. The northern wall of the northern exedra has been measured as 1.50 m. The thickness of the western wall in the exedra cannot be measured. If it and the eastern walls were equal in thickness to the northern wall, 1.50 m., the resulting clear width would be 17.69 m. or 4 cm. less than 60 R. ft. And from this the total width of both the exedras and the transept from the outer faces of the eastern and western walls would be 70 R. ft.

The approximate total width of the transept, including its exedrae from the outer face of the northern exedra wall to the outer face of the southern exedra wall, may be computed as follows:

[1] Reusch, "Die Palastaula in Trier", *Frühchristliche Zeugnisse im Einzugsgebiet von Rhein und Mosel*, Trier, 1965, 145. See also: the Curia Senatus, Rome, Bartoli, *Curia Senatus*, Rome, 1963, pl. LXXXII; the Basilica of Maxentius and Constantine, Minoprio, "A restoration of the Basilica of Constantine, Rome" *P.B.S.R.* 17, (1932), pl. I.

the transept proper from the outer face of the northern columnar screen to the outer face of the southern columnar screen	66.43 m.
the clear inner depth of the northern exedra 10.76 m. × 2	21.52 m.
thickness of the northern wall of the northern exedra 1.50 × 2	3.00 m.
	90.95 m.

This is 407$^{1}/_{2}$ *palmi* or 307$^{1}/_{2}$ R. ft.

4. *The length of the nave*

Nothing of the nave's length is subject to measurement. Alfarano and Peruzzi are the only sources. The former gives a length of 406 *palmi* and, following the method he used, this must be assumed to have been the clear inner length of the nave. The control of this dimension is a calculation from the incremental measurements given by Peruzzi in UA 11[1]. He records a distance of 224 *palmi* from the eastern face of the post-Bramante counterpier in the nave to the inner face of the eastern façade wall of the Constantinian basilica. Measuring from the same base line he gives a distance of 715 *palmi* to the face of the top step of the stairway in front of the gatehouse of the atrium. This amount is the first in a column of sixteen figures that appears in the lower left-hand corner of the drawing and whose sum is 1357. The addition must be related to the statement written above it, "*el tutto dal* [*portico*] *la cappella exteriore fino ale scale* [*canne*] *son canne* 136", the bracketed words cancelled and the amount written over "135 *pal.* 5". Thus the total distance from Nicholas V's choir to the first step of the eastern stairway was between 1355 and 1360 *palmi* by Peruzzi's measurement [1]. The first four amounts following the 715 *palmi* in the addition must represent the width of Bramante's nave pier, 50 *palmi*, the space between it and the eastern crossing pier, 60 *palmi*, the crossing pier's face along the axis of the nave, 43 *palmi*, and the clear span of the crossing, 185 *palmi*. The distance from the inner face of the eastern façade wall to the center-line of the dome and the transept of the new church according to Peruzzi's measurement is 471$^{1}/_{2}$ *palmi*, 105.33 m.

There exists no accurate plan made by modern surveyors that correlates the surviving elements of the Constantinian church with the plan of the Renaissance church. Ferrabosco's section, and drawings derived from it, show the rear face of the Niche of the Pallium in the Confessio, i.e., the eastern face of the *muro rosso* of the *tropaion* and by extension that of the western wall of the transept, as *ca.* 21 *palmi* or 4.69 m. west of the north-south axis of the new church [2]. Employing this dimension the following calculation can be made:

Distance from the inner face of the façade wall of Old St. Peter's to the center-line of the transept of the new church	*palmi* 471$^{1}/_{2}$
Distance from the center-line of the transept of the new church to the face of the *muro rosso*	21
	492$^{1}/_{2}$
less:	
Width of the transept from Alfarano	78
Width of the eastern wall of the transept assumed as equal to that of the western wall (1.65 m.)	7$^{1}/_{2}$
	85$^{1}/_{2}$
Hence	492$^{1}/_{2}$
	−85$^{1}/_{2}$
Clear inner length of the nave	407
	(90.78 m.)

[1] We are indebted to Deborah Wilde Kellogg who has explained to us the significance of this column of figures. Her study of its implications for the history of the new church is being prepared for publication.

[2] Letarouilly, *Le Vatican et la Basilique de Saint Pierre de Rome*, Paris, 1882, pls. 2, 7, 49, 50.

b) The superstructure (pl. VI)

The restoration of the superstructure depends on the dimensions written on or scaled from architectural sketches and drawings principally by Peruzzi and Antonio da Sangallo and his assistants, on the dimensions given in Alfarano's text and on the information concerning proportions, general characteristics and details contained in sixteenth and early seventeenth century views. Christern has employed a greater number of these sources with more diligence than has any previous student of St. Peter's. We concur in much of his proposed reconstruction. Our departures from or reservations concerning his conclusions will be noted below.

It must be remembered that no archaeological data exist for the church's superstructure to serve as a control over the information transmitted by secondary sources. S. Paolo f.l.m., as known through Nicolai's description and his architect's engravings, serves as a control in some respects on the main lines of St. Peter's [1]. In some points it can be shown to have agreed with the older basilica quite closely. Since reference will be made to critical dimensions of S. Paolo, a table of comparative dimensions of the two churches is included on p. 286.

1. The nave

UA 121r (fig. 196), the only preserved drawing of a cross-section of the nave of the old church, is restricted to the main nave only from the pavement to just above the lower chord of the trusses of the roof. The clear width of the nave shown in the drawing has been found to be at variance with that provided by surviving archaeological evidence. Further caution is advised in using the drawing because it is a clean studio drawing, because it bears almost no written dimensions and because its graphic scale is too small to permit its use for very exact dimensions. A table of corresponding dimensions read by Christern and by us illustrates the latter defect [2]. In most instances the differences are small, but they show, once more, that the graphic evidence for St. Peter's does not permit a reconstruction of its superstructure within the dimensional tolerances characteristic of modern archaeological investigation. It is nonetheless valuable evidence for the general arrangement of the nave's cross-section and for the approximate dimension it records. Christern has demonstrated the drawing's authoritativeness in establishing the height of the superstructure to the seating of the nave's trusses as approximately 144 *palmi*, 32.17 m. or $108\frac{3}{4}$ R. ft., although our calculation is fractionally less. It may be therefore that the top of the clerestory was 110 R. ft [3].

Some previous studies of St. Peter's have assumed that the height of 170 *palmi* given by Alfarano was intended as the distance from the floor to the bottom chord of the trussing [4]. But Christern has demonstrated that this figure, which occurs in a sequence of overall dimensions, was the height of the nave to the apex of its roof [5]. The angle between a wall height at the

[1] Nicolai, *Della basilica di S. Paolo*, Rome, 1815.

[2] Dimensions scaled from UA 121 in *palmi* (A. F.):

Distance	Christern	Our readings
Clear width of nave		104.21
Axial width of nave	106	108.13
Height to bottom chord of truss	144	143.50
Height from pavement to soffit of architrave	50.2	49.82
Height of base of column	5.1	5.41
Height of shaft of column	39.9	39.33
Height of capital	5.2	5.08
Height of entablature	9.2	8.95
Height to sill of clerestory windows	107	106.70

[3] The corresponding height at S. Paolo, according to Nicolai, *op. cit.*, 305, was 137 *palmi*, 8 *oncie*, $2\frac{1}{2}$ *minuti* or 103.8 R. ft. The intended height to the top of its wall may have been 105 R. ft.

[4] E.g., Jongkees, 6, pls. II, III; Krautheimer, *Early Christian and Byzantine Architecture*, Harmondsworth, 1965, 36, revised in 2nd ed. 1975, 60.

[5] Christern, I, 140 ff., a conclusion arrived at independently by Bannister, *op. cit.*, *J.S.A.H.*, 27 (1968), fig. 14, and Frazer, Millon and Frazer, *Key Monuments in the History of Architecture*, New York, 1965, fig. 128.

eaves of 144 *palmi* and a ridge height of 170 *palmi* agrees with the pitch of approximately 25° just discernible in the roof in the Sangallo drawing. The equivalent height in Roman feet is $128\frac{1}{3}$; perhaps the designed dimension was 130 R. ft.

Following its height, the most important cross-sectional dimension of the nave to determine is the distance from the pavement to the soffit of the architrave. Despite the well-documented use of spoils for both the columns and the entablature, this dimension had to remain constant for static and artistic reasons. This distance scales $49\frac{5}{6}$ *palmi* on UA 121. Two additional drawings, one, UA 120r, attributed to Peruzzi (fig. 197) and the other to Cherubino Alberti (fig. 219), record the height of the order. According to the first the height was $48\frac{5}{6}$ *palmi*. The height given in the latter drawing is $47\frac{2}{3}$ *palmi* [1]. The maximum variation among the three sources is $2\frac{1}{6}$ *palmi* or 48 cm. Christern, suggesting that the Alberti drawing has a certain idealized quality about it, called attention to the close correspondence of the Peruzzi and Sangallo drawings which, indeed, differ by exactly 1 *palmo* [2]. Since the Peruzzi drawing bears a written dimension, it is apparently a field sketch, and since its dimension is more nearly a round number in Roman feet, 37, we incline to accept Peruzzi's height of $48\frac{5}{6}$ *palmi*, 10.91 m. The discrepancy between the two figures is, in any event, only in the order of two percent.

Since the entablature, over 200 m. in length including that built into the eastern wall, was composed of heterogeneous spoils, the top of its sima would not have run in one unbroken line. The unevenness may have been compensated for by the addition of levelling courses of stuccoed brick above the shorter lengths of entablature [3]. The three drawings just discussed with respect to the height of the colonnade are also our only sources for the height of its entablature. UA 121 (fig. 196) represents Sangallo's presumed extension of the entablature of the old nave across the projected *muro divisorio*. It scales *ca.* 8 *palmi* or 2.00 m. Peruzzi's sketch (fig. 197), which represents only the architrave and frieze, records their combined height as $6\frac{1}{6}$ *palmi* or 1.38 m. If both drawings are approximately correct the resulting cornice would have been *ca.* 62 cm. high. This is less than one third the total height of the entablature scaled from Sangallo's drawing, and it appears both too low in proportion to the other members and too low for a bracketed cornice that drawings show to have formed at least a part of St. Peter's entablature (fig. 202) [4]. On the other hand, Cherubino Alberti's abundantly dimensioned drawing depicts an entablature that was too high in Christern's opinion to be accepted. The sum of its dimensions is 12 *palmi* 11 *oncie* or 2.88 m., and it comprises the following: architrave, 3 *palmi* 4 *oncie*; frieze, 4 *palmi* 3 *oncie*; and bracketed cornice, 5 *palmi* 4 *oncie*. Employing the graphic scale at the bottom of the drawing, the cornice measures only some 5 *palmi*. If the drawing, rather than the written dimension, is correct, the entablature would measure only 2.81 m. Unquestionably, the bracketed cornice would have been the largest of the three elements of the entablature [5]. It is interesting to compare Cherubino Alberti's dimensions of the architrave and frieze with those of a richly decorated second century entablature with a bracketed

[1] Computed from the following elements: base 5 *palmi* 6 *oncie*, shaft 39 *palmi* 7 *oncie*, capital 5 *palmi* 6 *oncie*. Alfarano records the height of the columns as 40 *palmi*, but this is clearly the rounded height of a typical column shaft.

[2] Christern-Thiersch, II, 6, n. 3. The evenness of the difference arouses suspicion and the presence of a human error of one *palmo* should be considered.

[3] It may be to such a levelling that Grimaldi refers when he describes the nave «*cum suis magnificis architrabibus marmoreis, zophoro musivo et corona lateritia supra quam surgebat parietes altissimi*», Vat. Barb. lat. 2733, f. 105v.

[4] See also the illustrations in the Grimaldi-Tasselli album.

[5] Comparanda among entablatures of the imperial period in Rome with bracketed cornices show as proportions of architrave, frieze, and cornice: Temple of the Dioscuri, late Augustan, $1:1:1\frac{2}{3}$; Temple of Concord, $1:?:1\frac{3}{4}$; Forum of Nerva, $1:1:1\frac{1}{4}$; Temple of Minerva in the Forum of Nerva, $1:1:1\frac{1}{4}$; Pantheon, interior order, $1:1:1\frac{1}{3}$. The entablature of St. Peter's, as recorded by Cherubino Alberti, is unusual in that the frieze is markedly higher than the architrave.

cornice such as that of the interior order of the Pantheon [1].

	St. Peter's (Alberti)	Pantheon
architrave	.73 m.	.79 m.
frieze	.95 m.	.79 m.
	1.68 m.	1.58 m.
cornice	—	1.05 m.

Applying the same ratio of architrave and frieze to cornice, 2: $1^1/_3$, to the entablature of St. Peter's, the cornice would be 1.12 m. or precisely 5 *palmi*. And applying the same ratio to the height of the architrave and frieze given by Peruzzi the resulting cornice is .92 m. We are inclined to think that Cherubino Alberti's drawing may be worthy of greater weight than Christern accords it. But in the absence of incontrovertible evidence all that can be said is that the entablature was probably no lower than *ca.* 2.30 m. and no higher than *ca.* 2.80 m. The top of the entablature, therefore, was somewhere between *ca.* 13.20 and *ca.* 13.70 m. above the pavement. It may be worth noting that the median value, 13.45 m. is close to the height of the springing arch of the apse [2].

The architrave's soffit that Cherubino Alberti shows in section scales 4 *palmi*, and the same dimension results from scaling the thickness of the wall in UA 121r. The coincidence strengthens the credibility of both sources for this dimension. For a clerestory wall over 19 m. high standing over a colonnade, a width of 4 *palmi*, 89.36 cm. or 3 R. ft., seems perilously narrow. And UA 121r graphically demonstrates that it was, yet Alberti's drawing no less clearly shows that the thickness was determined by the *spolia* available for the entablature.

Alfarano attributed eleven windows to each of the clerestory walls, each 22 *palmi* high and $14^1/_2$ *palmi* wide (4.91 m. by 3.23 m.). All drawings depicting the nave east of the *muro divisorio* show it to have contained five round-arched windows over eleven columns; thus by single proportion Alfarano's statement is confirmed. There is no record of there ever having been a greater number, or of any blocking of windows such as took place in the more amply fenestrated clerestories of S. Paolo and S. Maria Maggiore [3]. Christern has shown that had there originally been a window over each intercolumniation, as in the two later basilicas, i.e., 22 in each clerestory, the intervening piers would have been only 65 cm. wide [4]. We agree that such appears to be structurally impossible.

Neither Alfarano nor any other source gives the height of the clerestory window sill above the floor. Christern has restored the sill-line at approximately 23.70 m. above the pavement [5]. His proposal is based on the observation that all exterior views of the nave show the windows to have sat on a line close to the junction of the side aisle roof and the clerestory wall, as in most early Roman churches, and on a comparison of the height of the clerestory wall of St. Paolo (pl. IV) from the crown of its arcade to the sill of its clerestory windows which was decorated with a pictorial program almost identical with that installed at St. Peter's, presumably in the fifth century. The dimension obtained is sufficiently close to 80 R. ft., 23.65 m., to suggest that such was the design dimension, if the premises of Christern's calculation are accepted. The sills of the windows in the *muro divisorio* in UA 121r scale $106^2/_3$ *palmi* or 23.84 m. which is sufficiently close to Christern's calculation to suggest that Sangallo intended to place the

[1] Christern-Thiersch, II, 2, n. 4, attributes the architrave represented by Alberti to the early Antonine period, citing Strong, «Late Hadrianic architectural ornament...», *P.B.S.R.* 21 (1953), 125.

[2] Below, 252.

[3] Above, 137, 155; *Corpus*, III, 30.

[4] Christern-Thiersch, II, 4. The piers at S. Paolo, where the majority of windows had been closed by the early nineteenth century, as were those at S. Maria Maggiore, were *ca.* 1.10 m. wide.

[5] Christern, I, 145 ff.; Christern-Thiersch, II, figs. 7, 8.

new window sills in line with those of the old clerestory. The view of the *muro divisorio* as built, in the Grimaldi-Tasselli *Album* (f. 17), demonstrates that the intention was carried out [1]. Having established the height of the clerestory window sill at *ca.* 80 R. ft., it is important to recognize that the distance is equal to the clear width of the nave, and its choice, therefore, must have been a conscious consideration of design. We suggest, in fact, that the selection of the height of the sill of the clerestory window preceded and determined the height of the aisle roof.

The windows shown in UA 121r are $26^2/_3$ *palmi* high. This is 1.05 m. higher than the 22 *palmi* Alfarano gave for the height of the clerestory windows. This evidence might call Alfarano's reliability into question were it not that the height of the windows in S. Paolo agrees with his dimension for those at St. Peter's, which we accept. We also accept his width of $14^1/_2$ *palmi* which produces a window proportion of 1 : $1^1/_2$. The repair of window glazing in the apse and in the eastern façade late in the seventh century indicates that the church had already been glazed at least in part [2]. It is not unlikely that all of the windows of the basilica were originally glazed. But no late antique or early medieval window frames appear to have survived into the sixteenth century, as all of those seen in views are simple forms of Gothic tracery.

UA 20 (fig. 193) is the only eye-witness source for the width of the opening between the central nave and the transept. In the drawing it appears to have been equal to the 80 *palmi* or *ca.* 60 R. ft. of the apse opening. There is no source for its height. It is unlikely that it was lower than the arch of the apse, 100 *palmi* (22.34 m. or *ca.* 75 R. ft.). At the same time it could not have been higher than the transept whose roof its arch partially supported. It will be shown that the transept wall was between *ca.* 25 m. and *ca.* 26.50 m. high. The brick-arch was probably of considerable depth, and it must have been surmounted by several courses of bricks to form a proper seating for the trusses [3]. In our opinion, therefore, the arch was either equal in height to the apse or, at the most, it reached the sill-line of the clerestory windows [4]. The latter is the case with the triumphal arch of S. Paolo [5]. The difference between the alternatives is only *ca.* 1.30 m.

Alfarano is the source for dimensions in reconstructing the cross-section of the aisles. He said that the inner aisles were 82 *palmi*, 18.28 m., high and that the outer aisles were 62 *palmi*, 13.83 m., high. No one has seriously doubted that these dimensions refer to the distance from the floor to the cross-beams of the aisle roof as seen in a number of old views. Christern has offered the most detailed demonstration of the correctness of this interpretation [6]. The pitch of the aisle roofs, determined by these dimensions, closely agrees with that obtained for the nave roof from Alfarano's dimensions and from UA 121.

There is no source for the absolute height of the arcades. The view in the Grimaldi-Tasselli *Album* (f. 12), which is our only secondary source for the height of the arcades with respect

[1] We agree with Christern, I, 145, that the contrary evidence of Berlin I, f. 15r ,is unreliable and unpersuasive in the face of that of the other two drawings.

[2] Above, 175, dig. 701.

[3] Since the transept was lower than the nave (below, 251 ff.), an intermediate roof had to be placed over the transept at its junction with the nave in order properly to shed water. There is no evidence as to how this roof was framed but we think it more likely that the main trusses were continued throughout the transept with the woodwork of the lighter intermediate roof bearing on them. From the point of view of joinery this is the least complicated means of forming the intermediate roof. The arch over the nearly contemporary Aula Palatina at Trier, whose span is almost identical to that of the arch at St. Peter's, is 3 m. thick, Reusch, «Die Aula Palatina in Trier», *Germania*, 25 (1955), 180 ff., esp. 192. Roman masons may have been more venturesome than their northern brethren, but the Trier arch, which bears less of a load than did the arch of St. Peter's, indicates the magnitude of the problem.

[4] Christern-Thiersch, II, fig. 8, proposes the latter.

[5] 103 *palmi* as scaled from Nicolai, *Della basilica di S. Paolo*, Rome, 1815, pl. II.

[6] Christern, I, 146 ff.

to the colonnades and upon which a long succession of copies depended, depicts the arcades as lower than the nave colonnades [1]. Tolotti has calculated an approximate height of 9.40 m., *ca.* 32 R. ft., from the paving to the crowns of the arches. The data he employed are the height of the single preserved pedestal and base, the average height of the twenty-one shafts whose dimensions are recorded, the approximate height of a Corinthian capital appropriate to such a shaft, and the height of an arch turned over the known intercolumniation [2]. This remains an honest approximation; a precise dimension depends on the appearance of new evidence.

The Grimaldi-Tasselli section (fig. 198) and Berlin I, f. 15ʳ (fig. 206) show round-arched openings in the arcade walls aligned over each intercolumniation and set above the cross-beams spanning the outer aisles. These are not mentioned in literary sources and there is no firm evidence for their size. On the basis of the available space between the cross-beams of the outer and the inner aisles and the axes of the supporting columns, Tolotti suggests that the openings were equal in width and height, or that these varied but slightly. The arcade walls of the Lateran and S. Paolo offer the only comparanda; these present two alternatives. The openings in the Lateran arcade wall appear to have been almost semicircular while those of S. Paolo were more stilted. The problem posed by the original purpose of these openings has been discussed with respect to those in the Lateran [3].

Alfarano states that there were eleven windows in the exterior walls of each of the outer aisles, or such seems to be the meaning of "*in posteriorum vero minorum navium parietibus a dextris et a sinistris etiam viginti duas, undecim ad meridiem, et totidem ad aquilonem aequali spatio, etiam contra se invicem positas et a regione se respicientes*" [4]. The windows in the southern wall do not appear in any drawing and surely must have been blocked by the file of chapels and other structures that were built against the wall [5]. Those on the northern wall, however, appear in an interior view in f. 20 of the Grimaldi-Tasselli *Album* (fig. 210) and in the exterior views, Berlin I, f. 13ʳ and f. 15ʳ (figs. 205, 206). In all three they are shown as short windows surmounted by segmental arches. Their nearly square form may explain why Alfarano uniquely gives only their height, 12½ *palmi*, 2.79 m., but not their width.

Jean Fouquet's miniature of the nave of St. Peter's is the earliest view of the interior (fig. 200). The open, timber-trussed roof construction it shows agrees with the evidence of all later graphic sources. The woodwork of the roof at that time was the result of a centuries-long process of a renewal of areas of the roof's construction and of the replacement of its individual members. A fourteenth century document attributes eighty-two main beams to the nave's roof construction [6]. These must have been the members of the bottom chords of the trusses, each of which, according to the drawing in the Grimaldi-Tasselli *Album* and in line with common structural practice, contained two horizontal members. We assume, therefore, that there were forty-one trusses in the fourteenth century and, since each had to be inserted in purposely made slots in the upper walls, that they probably represent the original number. Whether the roof construction of the nave or that of the other parts of the church was originally open to view or whether it was concealed above a wooden, coffered ceiling, cannot be determined

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[1] CHRISTERN, I, 148 ff. discusses the stemma.
[2] TOLOTTI, «Quesiti sulla copertura delle basiliche costantiniane di Roma», *RAC* 48 (1972), 360 f., fig. 3.
[3] Above, 78, 80 f.
[4] ALFARANO, above, 209 f.
[5] Windows in the southern wall appear in the Toledo tondo (fig. 201). It, however, represents an abbreviated version of the nave; of the eight structures attached to the southern wall only the Choir Chapel of Sixtus IV is shown. The tall, round-arched windows are generically rather than archaeologically inspired.
[6] «*Sunt in dicta maiori navis ecclesiae coopertura LXXXII trabes principales*», so the *Memoriale de mirabilibus et indulgentiis quae in urbe romana existunt*, (VALENTINI-ZUCCHETTI, IV, 81), written during the reign of Urban V (1362-1370) or of Gregory XI (1370-1378).

from the present evidence. References by Paulinus of Nola and Prudentius around 400 and in an inscription from the reign of Honorius I (625-638) to *lacunaria* or *laquearia* in the nave, aisles and before the apse might be taken as evidence for a decorative, gilded, wooden ceiling at those times [1]. Deichmann, however, in summarizing the paucity of firm evidence for closed-wooden ceilings or for open-timber roofs in Early Christian churches, has emphasized the topical character of such references to glistening ceilings or roofs in late antique buildings, especially in the writings of Paulinus and Prudentius [2]. On the other hand, he has eschewed, rightly in our opinion, Sackur's extreme position which would restore open-timber roofs to all of the major early churches of Rome. While he finds no evidence to support a firm proposal with respect to the Lateran, St. Peter's and S. Paolo [3], he has demonstrated the admiration for coffered ceilings in the Roman period as evidenced by the survival of members of coffered ceilings in marble and in painted substitutes. Moreover, in the first half of the fifth century the presence of a clerestory wall at S. Maria Maggiore, classically articulated by pilasters and a stucco rinceaux cornice, and the mosaic of the triumphal arch of S. Paolo that stops slightly more than 5 *palmi* below the bottom chords of its roof trusses (fig. 142a) suggest the intention of installing wooden ceilings in those churches, even if such were never actually constructed. A. F. therefore prefers to leave the question of the decorative character of St. Peter's early roof construction open, without excluding the possibility of a coffered ceiling, while R. K. accepts the latter.

2. *The transept, apse, and exedrae*

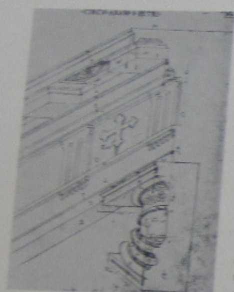
Alfarano thought the transept to have been the same height as the nave, although there was little of it standing for him to observe. Until recently his statement has been accepted in all reconstructions. Christern was the first to question the equality of their heights [4]. It is his hypothesis that the transept was only *ca.* 25 m. high, some 7 m. below the seating of the nave trusses. That the transept was considerably lower than the nave is proven by the appearance of the old church in the background of the *Adoration of the Child* in the Toledo Museum of Art (fig. 201). Although it substantiates his hypothesis in its general conclusions, the work, which was unknown to Christern, is too summary to serve as a basis for the calculation of the magnitude of the difference between the two parts of the church [5].

Christern, lacking the painting's explicit evidence, arrived at his conclusions from two independent avenues of inquiry. Employing data from UA 121ʳ (fig. 196) for the height of the Constantinian nave and the known difference in the levels of its pavement and that of the new church, he transferred the height of the former to the nave elevation of the latter which he used as a control of known magnitude. He then projected the height of the old nave onto the piers of the sixteenth century church standing adjacent to the remains of the old transept as seen in sixteenth century views. This procedure did not produce firm measurable differences due to the inexactness of the views, but it did reveal clear, proportional differences in the heights of the two elements. From this analysis the transept appeared to have been somewhat lower than the nave. He then took Bramante's *tegurium*, built against the Constantinian apse and the western wall of the transept, as an instrument for calculating the approximate height of the

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[1] Above, 173 ff., digs. 396, 400, 625-638.
[2] DEICHMANN, «Untersuchungen zu Dach und Decke der Basilika», *Charites: Festschrift für Ernst Langlotz*, Bonn, 1957, 249 ff., esp. 255 f.; summarized by DEICHMANN, «Decke», *Reallex. f. Antike u. Christentum* 3, (1957), cols. 637 ff.
[3] DEICHMANN, *op. cit.*, *Festschrift Langlotz*, 263; SACKUR, *Vitruv: Technik und Literatur*, Berlin, 1925, 166 ff., esp. 170 ff.
[4] CHRISTERN, I, 153 ff.; CHRISTERN-THIERSCH, II, 5 ff.
[5] Above, 223.

transept (figs. 202, 204, 209). The height of the opening of the apse that the *tegurium* covered, it will be recalled, is known from Alfarano to have been 100 *palmi*, 22.34 m., or 75⅓ R. ft. No measured drawing of the entire *tegurium* is known, but its plan can be reconstructed from the archaeological evidence produced by the Vatican excavation; its general appearance is conveyed by sixteenth century views; and a measured drawing in the Coner Codex (fig. 222) gives the dimensions of its Doric order with the exception of the height of the pedestal and the column shaft [1]. The latter can be approximated by analogy with contemporary norms for the proportions of the order; but, of course, any height calculated on such premises will contain a margin of error. An inscription on the first page of the Coner Codex states that the subsequent drawings are measured in Florentine *braccie* and *minuti*. Converting the dimensions given for the order of the *tegurium* from Florentine *braccie* into meters, Christern arrived at a height from the pavement to the top of the entablature of 11.76 m. which he thought too small in relation to the height of the apse to be enclosed. Despite the inscription in the manuscript, he assumed the dimensions, at least of the *tegurium* drawing, to have been in Roman *braccie* and *oncie* which produces a height of 15.58 m. — a dimension more in keeping with the proportions of the *tegurium* as they appear in old views. He sought confirmation of this unit of measure in the fact that the width of the plinth, computed by doubling the preserved projection of the pedestal of the socle, is equal to the dimension of the plinth given in the Coner Codex if Roman *braccie* and *oncie* are used. The latter, however, is no proof as a similar coincidence occurs using Florentine *braccie* and *minuti* as stipulated by the inscription. Nor does the use of this measure produce as low an order as Christern has calculated. He used 1 *braccio* 16 *oncie* as the diameter of the column in computing the height of its shaft. This is, however, the upper diameter, and the critical diameter of 1½ *braccie* appears at the bottom of the shaft in the drawing. In Florentine *braccie* this produces a lower diameter of 87.5 cm. and not 73.9 cm. as calculated by Christern. If, as is assumed, the height of the shaft was approximately eight times its lower diameter, it would have been *ca.* 7.00 m. and the order would have been 12.84 m. high. That such is in fact the correct height is suggested by a drawing of the *tegurium* in the Mellon Codex [2]. It shows the *tegurium* much as it appears in later *vedute* but surmounted by a faceted dome rather than by an attic and gabled roof. It appears that the author of the drawing was considering the creation of an interior rotunda over the shrine of the Apostle by constructing a new, hemispherical vault that would complete the old conch of the apse. Clearly the façade could not have risen above the springing of the vault of the apse, i.e., 13.40 m.



(London, Soane Museum)

Fig. 222. St. Peter's. Anonymous Coner, Bramante's tegurium, details, ca. 1515.

While our reconstruction of the order of the *tegurium* as some 2.75 m. lower than Christern's is of interest for Bramante's structure, it does not materially alter his conclusions for the height of the Constantinian transept. We are inclined to treat the evidence of the views for the height

[1] Ashby, «Sixteenth century drawings of Roman buildings», *P.B.S.R.* 2 (1904), 1 ff., esp. 43 and pl. 79.
[2] Graf Wolff Metternich, *Die Erbauung der Peterskirche...*, I, 1972, pl. 25.

of the *tegurium* with caution, especially as the proportions of the internal articulation they show vary considerably. However, their evidence is that the height of the ridge of the *tegurium* was between 22.50 m. and 25 m. above the floor.

The construction of the *tegurium* roof may serve as an additional means of approximating the height of the transept. Since the transept roof spanned some 18 m., it probably was either trussed or had horizontal cross-beams. If so, the bottom chords would hardly have been set below the apex of the apse. Using the same pitch of 25° as that of the roof of the old nave, the resulting height of the ridge externally would be *ca.* 27.25 m. Dosio in his view of the southern flank of the *tegurium* (fig. 209) clearly shows that its ridge reached to the height of the transept wall as it was preserved in the second half of the sixteenth century. For all of the reasons rehearsed above, we agree with Christern's lower transept proposal; but in the light of all the ambiguity of the various sources, in our opinion its actual height was perhaps greater than the 25 m. to which he restored it, although clearly lower in relation to the nave than that of S. Paolo.

The shafts of the columns separating the transept from its exedrae were said by Alfarano to have been reused in the Porta del Popolo [1], and still are seen on its outer face. Their shafts have not been recut and, scaled from Letarouilly, they measure 6.86 m. [2]. The height of the preserved base is 59.2 cm. The Stockholm drawing shows Composite capitals over the shafts in the northern colonnade which, judging from the lower diameter of 84.5 cm. of the preserved shaft, must have been some 85 to 90 cm. high. This would result in a total column height of between 8.30 and 8.35 m. According to the drawing, the columns, at least those at the southern exedra, supported a complete entablature with a bracketed cornice of approximately the same height as the architrave and frieze. Thus the entablature must have been *ca.* 1.80 m. At the ends of the columnar screens, at least at the northern exedra, the entablature rested on wall piers without pilaster capitals.

We attribute the three gray granite column shafts, found in the northern transept, to the columns that stood in the openings between the northern side aisles and the transept documented in UA 20 and in the Stockholm drawing (figs. 193, 204) [3]. There is no record of the fate of the fourth column nor that of its mates in the southern aisles. The height of the one measurable shaft is 6.82 m., close to that of the Porta del Popolo columns attributed to the exedra colonnades. The foot of the shaft is invisible in the Stockholm drawing, but, judging from the narrowness of the opening in which they stood, one would expect that each pair of columns stood on simple bases which would have been less of an impediment to circulation than pedestals of the type found in the aisle arcades. Christern is probably correct in suggesting that the height of the columns at the ends of the aisles was equal to that of the exedra columns [4]. The column visible in the Stockholm drawing supports an entablature composed only of an architrave and a frieze with the bed moulding of a missing cornice. That this is perhaps the extent of the original entablature is suggested by the stump of masonry resting on the frieze. It, in turn, appears to support a light, wooden roof, perhaps erected to shelter a shed or a construction office. The masonry stump gives the impression of the jamb of an opening. In the light of this we may wonder whether Alfarano, in speaking of the *fornices* that opened from the nave into the transept, was not using *fornix* literally as an arch. If so the jamb would be that of an arched opening over and relieving the entablature. But Alfarano's description of the lateral openings as *fornices* must be taken with extreme caution. It is likely that he saw none of the openings

[1] Alfarano, 8.
[2] Letarouilly, *Les Edifices de Rome Moderne*, III, pl. 232.
[3] In agreement with Christern-Thiersch, II, 13.
[4] *Ibid.*

in their entirety. He omitted the columns standing in the openings and in his plan drew the latter so large that he may have thought they could only have been spanned arches. Indeed, he may have restored the openings, by comparison with the openings in the side aisles of S. Paolo. The problem of the area directly over the columns at the ends of the aisles is therefore unresolved.

Alfarano attributed sixteen windows to the transept — two at either end and four groups of three each arranged at either side of the great, arched openings in the eastern and western walls of the transept. The evidence of the Stockholm drawing supports Alfarano with respect to the two windows in the short walls. It shows the right jamb of the eastern window in the southern end of the transept falling approximately over the axis of the eastern column of the screen below it. This implies that the window openings were *ca.* 2.36 m. — 8 R. ft. — from the corners of the wall and that the blank wall between them was *ca.* 5.20 m.

Previous reconstructions of the pattern of the windows in the eastern and western walls of the transept have generally followed Alfarano. Christern did not address himself to the problem. Bannister, however, proposed a restoration of only eight windows in these walls arranged in four groups of two windows each [1]. His stated evidence is the appearance of but one window in the northern arm of the western wall in the Stockholm drawing, the second presumably being obscured by the low, columnar screen through which the artist viewed the transept equal in height to the nave. The lower transept height, proposed by Christern and now confirmed by the evidence of the Toledo tondo, eliminates even the possibility of two windows in the northern and southern arms of the east wall of the transept, as the second opening in each case would have been blocked by the sloping roof of the aisles [2]. Faced with this evidence several possibilities arise for the pattern of the fenestration of the eastern and western walls of the transept. The eastern wall may have been devoid of windows or either end of the wall may have contained one window each.

The position of the roofs abutting the transept — those over the aisles and the exedrae — offer the only means for restricting the possibilities. The form and position of the aisle roofs can be restored with reasonable certainty. Those of the exedrae cannot be. Neither literary nor visual sources provide useful information concerning either their form or height. While flat roofs are possible, we think them unlikely. Christern demonstrated the possibility of both shed and gabled roofs over these chambers [3]. We agree with him that objective evidence is lacking for a choice between the two. We think, however, that whichever obtained, the bottoms of its sloping rafters would hardly have been set lower than the tops of the entablature of the exedra columnar screens, i.e., *ca.* 10 m. above the pavement. If the pitch of the roofs conformed to those of the nave and aisles, the ridge of a gabled roof would have risen to *ca.* 15.50 m. Correlating the transept windows arranged in the short walls in accordance with the horizontal spacing suggested by the Stockholm drawing produces a minimum sill height of *ca.* 14.50 m. A shed roof would have intersected the transept wall at *ca.* 16.50 m. Acceptance of the former figure would preclude any windows in the eastern wall of the transept if they were to be placed at the same height. The latter height would permit the placement of single windows in the northern and southern halves of the eastern wall of the transept if they were set very close to their respective corners.

[1] Bannister, «The Constantinian Basilica of St. Peter at Rome», *J.S.A.H.* 27 (1968), 3 ff.

[2] There are no transept windows visible in the Toledo tondo, but due to the small size of the image perhaps this omission should be discounted.

[3] Christern-Thiersch, II, 25 f., figs. 9a and b. He calls attention to the row of beam holes visible in the northern transept wall over its columnar screen in Berlin I, f. 13r. These may have been the sockets for the upper ends of a shed roof over the northern exedra, but they may equally have been the settings for the beams of a floor installed when Hadrian IV raised the exedra walls to the height of the transept.

The establishment of minimum sill heights for the two forms of exedra roofing is important in that it shows that the Stockholm drawing is of little value for the calculation of the height of the window sills. Compared to the height of the column below it, the window in the southern wall appears to be *ca.* 13.80 m. above the floor; that of the window visible in the western wall, when related to the height of the *tegurium*, seems to be *ca.* 12.80 m. above the floor. And we have shown both heights to have been too low to have cleared either form of the exedra roof and the aisle roof.

We have previously noted that the height of the sills of the clerestory windows in the nave was equal to the nave's clear width [1]. Applying the same principle to the transept, the sill's height would be 17.42 m. The crowns of the arches of the windows would thus be 17.42 m. plus 4.91 m., that is 22.33 m. or slightly over 75 R. ft. above the pavement. This is 1 cm. less than the 22.34 m., 100 *palmi* height of the arch of the apse. We think this is scarcely a coincidence and that the transept windows were placed at this height.

Acceptance of the height permits the placement of a window in the eastern wall of the transept over the opening into each of the nave's outer aisles. Despite the lack of evidence for fenestration in the eastern wall, we think the presence of such windows not unlikely. The arrangement of windows in the western wall of the transept is restricted by the presence of the stair tower at the apse's southern corner. It must have risen into the window zone if the door in its southern face, visible in Dosio's drawing, was to give access to the windows for their maintenance. If the size of the tower as shown in UA 20 and on Alfarano's plan is approximately correct, there would be only *ca.* 17 m. at either end of the transept wall in which to place windows. On the evidence of the Stockholm drawing, there would have been only one window, perhaps placed opposite a single window over the opening of the outer aisle in the eastern wall. Following Bannister's argument for two windows at either end, it should be pointed out that two windows appear in the drawing attributed to Hieronymus De Cock and reproduced by Geymüller (fig. 207). But had these stood as close together as shown in the drawing surely both would have appeared in the Stockholm drawing. At this point one wonders how a student of the church as conscientious as Alfarano arrived at a total of sixteen windows in the transept. If he depended on the testimony of others, it is obvious that their memories were faulty. He could have seen only the northern part of the transept wall intact; thus, if he depended on his own observations, his total of sixteen windows is a reconstruction. If the latter were based on the principle of symmetry he presumably would have seen three windows in the northern end of the wall. But the introduction of three windows in the available 17 m. produces such narrow intervening piers only *ca.* 1.90 m., that more than one window would be expected to have appeared in the Stockholm drawing. In this case special pleading along the lines used by Bannister fails to convince. The problem, therefore, remains unresolved, and we must content ourselves with having established the provable vertical placement of the windows and having restricted the area for the horizontal arrangement.

Windows in the apse are known to have existed prior to the time of Sergius I in the closing decade of the seventh century [2]. In the light of the number of well-lit apses in Early Christian churches in Rome and the difficulty of cutting new windows in a wall supporting a vaulted hemicycle we see no evidence that the five windows ascribed to the apse of St. Peter's by Alfarano were post-Constantinian additions [3]. He recorded their size as 16 *palmi*, 3.56 m. or *ca.* 12 R. ft., high and 11 *palmi*, 2.45 m., or 8⅓ R. ft., wide [4].

[1] Above, 219.

[2] Above, 175, dig. 687-701.

[3] Günter, *Wand, Fenster und Licht in der Trierer Palastaula und in spätantiken Bauten*, Herford, 1965, *passim*.

[4] Alfarano, above, 210.

Drawings are the only evidence for the fenestration of the exedrae, and information is available only for the northern wall of the northern exedra. In any case, the windows in the corresponding wall of the southern exedra would have been blocked or demolished when the Honorian mausoleum was constructed against it around 400. Only the western half of the northern exedra wall appears in Berlin I, f. 13ʳ and f. 15ʳ (figs. 205, 206). They represent round-arched windows rather than the segmentally-headed windows of the outer walls of the aisle and appear to have been larger than the latter. They were perhaps as large as the clerestory and transept windows. The evidence for the number of windows is equivocal. From the latter drawing it appears that the original number was either three or four, but it is difficult to restore more than two on the basis of the former drawing. This problem remains unresolved, although again there is nothing to suggest that the windows were not part of the Constantinian structure.

3. *The façade*

Alfarano's information concerning the eastern façade is terse. It contained five doors in addition to the Porta Santa, three in the central nave, 16 *palmi*, 3.56 m. or *ca.* 12 R. ft., wide and 29 *palmi*, 6.48 m. or *ca.* 22 R. ft., high, and two in each of the inner aisles 14 *palmi*, 3.12 m. or $10^{1}/_{2}$ R. ft., wide and 28 *palmi*, 6.24 m. or $21^{1}/_{4}$ R. ft., high. And it had seven windows: an oculus 14 *palmi*, 3.12 m. or $10^{1}/_{2}$ R. ft., in diameter, and six windows equal in size to those of the nave and the clerestory[1]. The width of the central door is given in UA 11ʳ as $16^{1}/_{2}$ *palmi* in ink and $16^{1}/_{2}$ *palmi* in sanguine. These appear to have been clear widths between the stone jambs of the doors and not the structural openings in the masonry wall.

There are four principal views of the façade. The illustration of the eleventh century Farfa Codex, the earliest, shows only three round-arched windows in the façade and the place of the oculus is occupied by a mosaic of the Agnus Dei in an aureole (fig. 199). We hesitate to accept the evidence of this drawing as a source due to the medieval practice of abbreviating architectural elements in illuminated manuscripts.

Dosio's drawing (fig. 211) represents a strongly projecting cornice, presumably of brick, running across the façade at the junction of the aisle roofs and the clerestory of the nave. We interpret this as a corbel upon which Gregory IX's masons erected the lining of the façade to support the new, deep cavetto. The three lower windows, therefore, must be earlier than the thirteenth century. The alignment of the upper windows with those of the clerestory suggest that they were erected contemporaneously. The creation of the lower windows in the central nave at a post-Constantinian date would have been a structurally hazardous undertaking. We assume, therefore, that the six round-arched windows are original. If the subject of the fifth century mosaic was the same as that seen in the eleventh century manuscript, the arrangement of the Twenty-four Elders into eight groups of three would conform to this assumption[2].

The lower, lateral openings, too, are best explained as features of the fourth century design. No compelling reasons for their subsequent creation emerge. They appear in line, more or less, with the arched openings in the aisle walls above the columnar arcades. The alignment suggests that their sills were set at slightly above 82 *palmi*. Christern's convincing restoration of the sill height of the clerestory windows and, thus, of the upper row of windows in the façade

[1] Alfarano, above, 209.
[2] The size and the placement of the windows in the façade of S. Paolo agree closely with the arrangement we propose here.

at 23.70 m. is close to 80 R. ft. It is tempting to expect a similarly round number for the height of the lower row and a height of 50 R. ft., 14.78 m. or $66^{1}/_{2}$ *palmi*, is proposed. The ample fenestration these eight windows would have given the façade conforms to the pattern of well-lit façades encountered in Roman basilicas later in the fourth and in the fifth century[1].

We can speak with less assurance of the date of the oculus. Oculi occur in the transept of S. Paolo[2]. But the Agnus Dei in the Farfa Codex drawing is an iconographical feature the medieval artist was more apt to render with greater fidelity than he did architectural detail. The gable of the mid-twelfth century northern transept wall had at least two oculi in it, and it is possible that the eastern oculus was installed during the restoration of Innocent III, or, more likely, under Gregory IX, when the new cavetto cut off the gable from the lower façade as a coherent surface for mosaic decoration.


(Venice, Museo Archeologico)

Fig. 223. St. Peter's. Constantinian monument from Pola Casket, *ca.* 430.

C) The Shrine and Altar

The focus of Constantine's church, both architectural and liturgical, remained the Shrine of the Apostle. Standing on the chord of the apse, its reconstruction, as proposed by the excavators and Toynbee-Ward Perkins and accepted by us[3], is based on both archaeological and graphic evidence, the latter provided primarily by the Pola casket (Fig. 223). The bottom part of the second century *tropaion*, up to a height of *ca.* 40 cm., was buried below the level of the basilica (figs. 224, 225). Its major upper part, 2.70 m. high, emerged from the Constantinian pavement as an

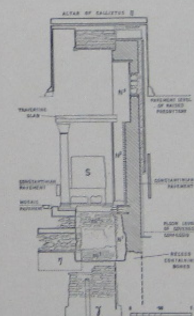

(Toynbee-Ward Perkins)

Fig. 224. St. Peter's. Remains of pre-Constantinian *tropaion*, east-west section.

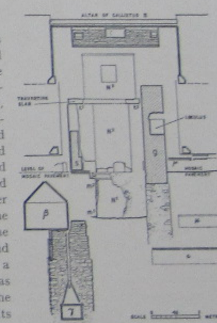
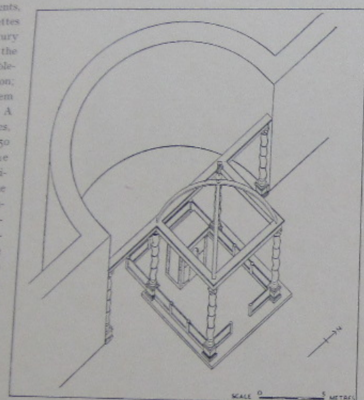

(Toynbee-Ward Perkins)

Fig. 225. St. Peter's. Remains of pre-Constantinian *tropaion*, north-south section.

[1] E. g., S. Paolo, above, 137, 155; SS. Giovanni e Paolo, above, vol. I, 288 f.; S. Sabina, above, vol. IV, 91.
[2] Above, figs. 87, 88.
[3] *Esplorazioni*, 169 ff.; Toynbee-Ward Perkins, 152 ff. and 200 ff.

isolated monument, the second century wall, of which it had been part being demolished on either side. What remained was the slender double-tiered niche of the *tropaion*; a travertine slab, projecting forward and separating the tiers; two colonnettes supporting the slab, their bottom ends and bases hidden below the Constantinian level; and two third century walls, projecting right and left of and flanking the *tropaion* (fig. 226)[1]. The Pola casket shows these remains incorporated in the Constantinian monument: the isolated niche was left standing as a backdrop, while the projecting elements, travertine slab, colonnettes and flanking third century walls were encased in the cupboard-like, low, marble-revetted, forward projection; a double door allowed them to be seen (fig. 226). A platform of marble plaques, *ca.* 8.50 m. wide and 10.50 m. deep[2], raised one step above the Constantinian level, bore the shrine and projected into the transept area, enclosed by parapets held by posts. A baldacchino carried by four vine scroll columns on pedestals rose over the shrine and was linked by architraves to a fifth and a sixth column. Placed respectively north and south against the springings of the apse, these two columns lined up with the rear columns of the baldacchino. The arrangement as shown in the Pola casket, is supported by archaeological evidence, as summed up in *Esplorazioni*[3]. Of the shrine, the top of the niche survives in the Pallia niche, inside the sunken Confessio of New St. Peter's; of its north and south faces small parts have been exposed in the excavations together with the marble revetment of the shrine; so has a large part of the rear wall behind the Pallia niche. Fragments of the platform which carried the shrine survive north and south (figs. 169, 170). On its marble pavement the sitings of the two rear columns of the baldacchino as well as the parapet posts at the northwest and southwest corners of the enclosure have left their marks. Finally, the



(Toynbee-Ward Perkins)

Fig. 226. St. Peter's, Constantinian shrine and baldacchino, reconstruction.

[1] *Esplorazioni*, loc. cit.
[2] *Ibid.*
[3] *Ibid.*

shafts of the six vine scroll columns survive, flanking the upper niches on the crossing piers southwest, northwest and southeast of New St. Peter's, meaning the Veronica, Helena and Andrew piers respectively[1].

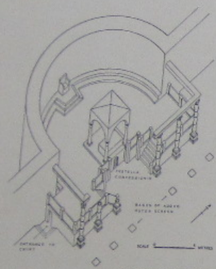
The site of the altar in Constantine's basilica remains in doubt and the evidence, entirely literary, is contradictory. *Liber Pontificalis* suggests that only Gregory the Great made it possible to say Mass over the body of the Apostle[2], thus implying that previously altar and shrine were unconnected. (We shall see later that in all likelihood the altar was placed over the tomb already shortly before Gregory's pontificate[3].) On the other hand, a remark of Jerome's — made in 406, but presumably reporting on the situation as of 386 when he left Rome — suggests that "... the bishop of Rome ... offers sacrifice ... over the bones of ... Peter and Paul, and ... treats their tombs as the altar of Christ ..." and thus implies identity of shrine and altar[4]. The latter has been proposed in recent years[5]; but the suggestion encounters a difficulty — the narrowness of the space available[6]. Assuming that Jerome's identification of tomb and altar is meant but loosely, the altar may have stood inside the parapet enclosing the baldacchino and thus close to but not over the tomb[7]. But it may have risen as well elsewhere inside the transept, "... *in altario*", to use the term still employed by Gregory of Tours after the altar had been placed over the shrine on the border-line of transept and apse[8]. In fact, the altar may have been portable — its description as golden[9] may well refer to a thick cover — and thus without a fixed site; this would also explain the absence of a lighting fixture *ante altare* as it existed at the Lateran[10].

d) The Crypt and New Presbytery

The only structural change in the Constantinian basilica within the period that concerns us took place in the late sixth century, either shortly before or in the pontificate of Gregory the Great. (For convenience's sake, we shall refer to it as Gregory's.) The apse level was raised 1.45 m. over the Constantinian pavement to form the floor of the new presbytery (fig. 227). This raised presbytery projected in the middle barely 1 m. beyond the chord of the apse so as to incorporate the *tropaion*; on either side it extended an additional 4 m. forward, thus forming two wings and occupying the site of Constantine's baldacchino and columnar screen. Over the site of the *tropaion* Gregory placed the High Altar; a *fenestella* in the front of the raised presbytery where it receded between the two projecting wings allowed the pious to offer their prayers over the remains of the shrine. But the arrangement is known only from literary sources[11]; so is the placing over the altar of a canopy[12]. On the other hand, of the projecting wings of the presbytery large portions of the front wall

[1] Ward Perkins, «The Shrine of St. Peter and Its Twelve Spiral Columns», *Journal of Roman Studies* 42 (1952), 21 ff., esp. 25 f.
[2] Above, 174, dig. 590-604.
[3] *Ibid*, dig. 589-590, and below, 276 f.
[4] *Contra Vigilantium*, cap. VIII (Migne, *PL*, 23, col. 346): «... *male facit ergo, Romanus episcopus, qui super mortuorum hominum Petri et Pauli, secundum nos ossa veneranda, secundum te vilem pulvisculum, offert Domino sacrificia, et tumulos eorum Christi arbitratur altaria?*» (We excerpt the translation of Toynbee-Ward Perkins, 214). For the date of *Contra Vigilantium*, see Altaner-Stuiber, *Patrologie*, Freiburg-Vienna, 1966, 401.
[5] Ruysschaert, «Réflexions sur les fouilles vaticanes», *Revue d'Histoire Ecclésiastique* 49 (1954), 47 f.
[6] Nussbaum, *Die Stellung des Liturgen am christlichen Altar*, Bonn, 1965, 228 f.
[7] *Ibid.*
[8] Above, 174, dig. 589-590.
[9] Above, 171, dig. 319-324.
[10] Above, 174; 9 f., dig. end of 312(?), and 89.
[11] Above, 174, dig. 589-590.
[12] *Ibid.*, dig. 590-604.

survive, though covered by a later lining [1]. Steps must have ascended to the presbytery; given the difference in level, 1·45 m., they would have numbered eight to ten [2]. They must have been placed against the projecting wings of the presbytery, possibly flanking the re-entry between the wings on either side of the *fenestella* [3]; but an approach from the outer ends of the wings, north and south, cannot be precluded.



(Toynbee-Ward Perkins, Shrine...)

Fig. 227. St. Peter's. Raised presbytery and column screen of Gregory the Great, reconstruction [4].

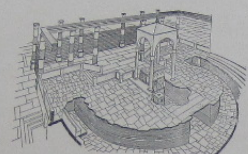


Fig. 228. St. Peter's. Raised presbytery of Gregory the Great and annular crypt.

Below the raised presbytery an annular crypt was laid out to provide access from the rear to the remains of the *tropaion*. Sufficient remains of the crypt have been uncovered to give a clear idea of its lay-out, supported by the countless filiations of the type. A lining wall, 34 cm. thick, was applied to the inside of the Constantinian apse (figs. 160, 161) and a semicircular corridor, 1.60 m. wide, 2·08 m. high, and accessible from the Constantinian level by doors at either end (they are still marked on Alfarano's plan) followed its inner curve (figs. 168, 228). The ceiling was formed by stone plaques, the walls were set with lamp niches. Since the pavement was 0·64 m. below that of Constantine's, steps — presumably four — must have descended from the latter. Little remains of the straight corridor which in all filiations departs from the apex of the semicircular one, leading to the Confessio chamber below the High Altar on the raised level of the apse, or of that chamber. But at least its direction survives in the eastward arm of the Cappella Clementina (figs. 168, 228). Of the Confessio chamber only the location is marked by the altar block found inside the altar of the cross chapel behind the Pallia niche. The shape of the original chamber, presumably square, and of the corridor approaching from the apex of the annular one can only be gauged by the numerous descendants of the type built in Rome and outside from the early seventh through the ninth centuries, beginning with S. Pancrazio [5].

[1] Above, 198.
[2] Six steps, as proposed in the reconstruction, Toynbee-Ward Perkins, 215, fig. 22 (our fig. 227), would result in risers, 24 cm. high.
[3] *Ibid.*
[4] The reconstruction reproduced here from Toynbee-Ward Perkins shows but six instead of the eight to ten steps ascending to the presbytery proposed by us.
[5] Above, vol. III, 163; also Apollonj-Ghetti, "La Chiesa di S. Maria di Vescovio", *RAC* 23-24 (1947-48), 253 ff., esp. 280 ff.

The raising of the presbytery in the apse, 1·45 m. above the original level, obviously brought with it the disappearance of the Constantinian enclosure of the shrine and its superstructure, the baldacchino and screen. Of the shrine, the forward cupboard casing was buried inside the elevation of the presbytery, as was the better part of the rear wall and its niche; both remained visible — if that is what it was—through the *fenestella* in the re-entering front wall of the presbytery. Only the top of the niche was enclosed inside Gregory's altar on the raised level of the presbytery. The Constantinian baldacchino and columnar screen were taken apart, and the six columns on their original pedestals were lined up on the Constantinian level against the front walls of the projecting wings of the raised presbytery. Whether their capitals and the surmounting entablature — as shown in Giulio Romano's reconstruction and referred to frequently in the *Liber Pontificalis* in the seventh and eight centuries [1] — were still the old ones, recomposed, remains an open question. A second row of six vine scroll columns was added in front of the first under Gregory III, 731-741 [2].

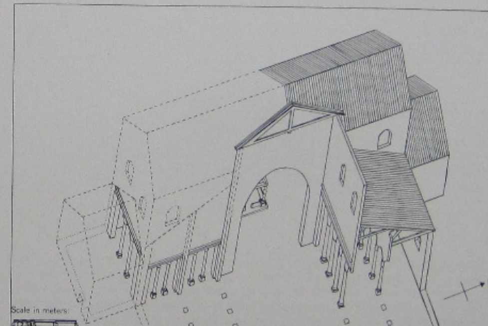


Fig. 229. St. Peter's. West end of nave and transept, reconstruction. (Lloyd)

2. The atrium

As recorded by drawings and descriptions, the atrium at the time it was demolished appeared as a slightly elongated rectangular courtyard, roughly 57·50 m. long and 44·70 m. wide [3]. To the north rose the palace of Innocent VIII, built around 1490, to the south a crenellated

[1] *LP*, I, *passim*.
[2] Above, dig. 731-741.
[3] For the measurements, as given by Alfarano and Peruzzi, UA 11r, and their exact metric equivalents, see Tabulation, above, 216 ff.

wall and other structures, likewise of late date (fig. 211). To the west, along the façade of the basilica, ran a narthex 63.70 m. long and 12.70 m. deep. Its arcade, however, eleven bays long and carried by columns and terminating piers, extended only the width of the nave and inner aisles; the north end of the narthex, not arcaded, was hidden behind the southwest corner of Innocent's palace. In the very center of the open court rose the Cantharus protected by its baldacchino; carried by eight columns, the latter stood on a platform slightly raised above the pavement. To the east — Peruzzi's hasty sketch (fig. 194) and Alfarano (fig. 195) are the only sources for the plan — the courtyard was terminated by the gatehouse and by flanking triple-arcaded halls, one on either side. The gatehouse being twice as deep as these latter, 18.28 m., they were backed up by squarish structures facing outward. There, a landing over 17 m. deep extended towards the flight of steps descending to the piazza. These, from the time of Paul II were thirty-five; since twenty years before there had been only twenty-eight, in 1375 only twenty, the level of the piazza apparently was gradually lowered[1].

a) Fourth century

It is clear that the atrium seen by Dosio was no longer the one laid out under Constantine. It is equally clear, however, that from the first an atrium was planned. As pointed out before, the carrying platform, built up at the very outset, over 240 m. long and over 90 m. wide, extended over the entire area of basilica, atrium, gatehouse and landing. Concomitantly with the length of the platform, its level, raised above that of the piazza, and a flight of steps must have been envisaged. Nor is it, we think, fortuitous that the distance from the façade of the basilica to the top of the flight of steps ascending from the piazza is 366 R. ft. or $484\frac{2}{3}$ *palmi* or 108.19 and 108.31 m. respectively, presumably intended as 360 R. ft. and thus equalling twelve modules of 30 R. ft. each, the basic measure used throughout the Constantinian plan.

The data available for envisaging plan and elevation of the atrium, both as originally planned and subsequently changed, are plan sketches, views and descriptions of sixteenth century date as well as written sources dating from the fourth through the eighth centuries. No archaeological evidence has survived.

1. *The plan*

Peruzzi's drawing UA 11r (fig. 194) is the most detailed source for the atrium's dimensions and those of its eastern gatehouse. His dimensions, where subject to control, have elsewhere proved reasonably accurate. The drawing, moreover, is clearly a sketch whose primary purpose was to record and study the dimensions of both the old and new churches. Peruzzi's figures may be compared with the less complete list given by Alfarano, the only conspicuous difference being one of 4 *palmi* in the clear depth of the open atrium proper. As previously mentioned, Peruzzi gave a length of 715 *palmi* for the distance between the east face of the nave pier of New St. Peter's and the uppermost step of the approach stairway. The combined dimension of the old nave from the counterpier, the thickness of the façade wall, and the terrace to the east of the gatehouse given by Peruzzi is 308 *palmi*. Hence, subtracting this figure from 715 *palmi*, the total length of the atrium, including narthex and gatehouse, is 407 *palmi*. The same distance is $407\frac{1}{4}$ *palmi* if the component dimensions provided by Peruzzi are tallied. The latter overlie dimensions written in sanguine which, if substituted, produce a length of $405\frac{5}{6}$ *palmi*. Substitution of Alfarano's dimensions for the clear length of the atrium and the depth of the gatehouse further reduces the length to $402\frac{1}{2}$ *palmi*. Whether Peruzzi's dimensions

[1] Alfarano, above, 121; Muntz, *op. cit.*, 18; Dondi, in: Valentini-Zucchetti, *Cod. Topografico*, IV, 65 ff.

written in ink are more accurate readings than those in sanguine, or represent a rounding-off of fractional quantities is difficult to determine. Since the length of *ca.* 407 *palmi* is derived by different means for the clear length of the nave, the coincidence is too close to be overlooked. We propose, for this reason, that the overall length of the atrium was likewise *ca.* 407 *palmi*, 90.92 m. or $307\frac{2}{3}$ R. ft.

Alfarano states that the atrium was as wide as the church and UA 11r shows that the northern wall of its western portico was aligned with that of the basilica. We see no evidence contrary to Alfarano's assertion. UA 11r and the drawings by Dosio and Tasselli document the encroachment of later construction on the Early Christian forecourt to the north and south. The church was still preceded, however, by an arcaded portico across its façade, although the date of the porch existing in the sixteenth century is uncertain. Alfarano records its depth as 53 *palmi*, 11.84 m. or 40 R. ft., while Peruzzi gives its depth to the outer face as 57 *palmi*. Since Alfarano elsewhere employs clear dimensions this discrepancy is explained, and we may assume the two central piers of the portico, seen in Peruzzi's sketch as well as in Dosio's view, to have been 4 *palmi* deep. The translation of Alfarano's dimension into even Roman feet suggests that no matter how extensive alterations to the portico were in the course of time (its re-roofing is more than once documented), in the sixteenth century it still stood on its original Early-Christian foundations.

The enclosing elements north, south and east of the atrium as first laid out can likewise be suggested. The porticoes north and south described by Alfarano are given by him a depth of 41 *palmi*, 31 R. ft., 9.17 m. While no longer standing in his day, traces of these porticoes — as we shall see they were built in the later fifth century — may have survived as a basis for his statement. Porticoes of such depth would have aligned with the arcades that separated the aisles of the church. If Alfarano is correct, as we think, both the foundations of the outer walls of the forecourt and of its internal, longitudinal divisions would have been simple extensions of the foundations of the basilica. Whether they were part of the initial conception cannot be determined, but we consider it possible that the fifth century roofed porticoes rested on Constantinian foundations and perhaps replaced early, uncovered elements enveloping the atrium.

Similarly, a suggestion can be proffered regarding the entrance wing at the eastern end of the atrium, when first laid out. The gatehouse and its flanking structures, as they appear in sixteenth century records, UA 11r, Heemskerk's *vedute* and Alfarano in the first place, are presumably of post-Constantinian date. Parts, however, apparently went back to the original construction. An outer wall, as we shall see, is documented as early as 396, and the coincidence of its distance from the façade of the church with the length of the nave is presumptive evidence that it was part of the initial design. Moreover, Alfarano's plan, though partially a restoration, clearly shows the eastern tract of the atrium bisected transversally into two parts — two triple arcaded exedrae to the west facing the open court and, to the east, two rectangular chambers, all four spaces flanking the central gatehouse that runs through both halves to form a deep, rectangular hall. The latter, however, is also marked roughly at its middle by projecting pilasters that are extensions of the wall separating the eastern and western halves of the tract. The southern pilaster appears also in UA 11r (fig. 194). The depth of the tract is, according to Alfarano, 81 *palmi* and $81\frac{2}{3}$ *palmi*, according to Peruzzi's dimension, UA 11r. Thus the northern, southern and eastern limbs of the late fifth century *quadriporticus* and of the enveloping platforms — we shall discuss such platforms as presumably having preceded these porticoes — were commensurate, but the western portico was not. This further supports the view that the western portico antedated the other three.

The distance from the wall bisecting the eastern tract to the face of the western portico of the atrium is one and one-half times the width of the open court. Possibly, then, the eastern arm of the atrium, in its original form equal to the depth of the other three that adjoined the outer wall of the forecourt, in a "single-file" arrangement, was altered later into the "double-file"

lay-out known to Alfarano. This hypothesis, however, presumes that the Cantharus did not stand in the center of the open area. Alternatively, then, the entrance tract may have been "double-file" from the outset: a gatehouse and flanking structures, all shallower than those known to Alfarano, roughly only 40 *palmi* deep; and, facing the atrium courtyard, a portico bringing its depth to 81 or 81½ *palmi*. The conjecture finds support in the considerably different thickness of the east as against the west wall of the gatehouse as it was known to Peruzzi, 5 as against 3½ *palmi* according to UA 11[?], and in the central position of the Cantharus in this reconstruction of the remaining open area. We tentatively favour this solution. A third possibility, less likely, is to assume that the eastern tract and the gatehouse always presented the plan as seen by Alfarano and Peruzzi (figs. 230, a, b, c, d).

2. *The elevation*

The earliest evidence for the appearance of the atrium is contained in the few hints, tantalizing at that, provided by Paulinus of Nola [1]. When describing a funeral banquet offered at St. Peter's in 396, he speaks of steps leading up from the piazza, the *campus*; but he does not give the number of these steps, and therefore the difference in level between piazza and platform at the time cannot be gauged. He mentions gates leading into the atrium — *ianuae*, in the plural — and refers to the landing, the space in front of them. Since there were gates, there must have been a wall enclosing the atrium, certainly east, facing the landing, and presumably north and south as well. As pointed out, we envisage this fourth century enclosure as occupying the site of and in stretches possibly incorporated in the atrium walls as they survived into the sixteenth century; in particular, the fourth century east wall and its gates would have corresponded to the front wall and the portals of the gatehouse and its flanking structures at the western edge of the landing (fig. 230). Inside the atrium Paulinus saw a fountain, a Cantharus, sheltered under a baldacchino, "a gabled dome" of bronze, he says, carried by four porphyry columns. It is essentially the arrangement as it survived until 1608 (figs. 211, 212), with the addition of four more columns in the eighth century [2]. Whether or not the fountain, the Cantharus — it may have been a large, flat, saucer-like bowl — from the first carried the Pigna remains in question [3]. For all we know, the Pigna could have been moved to St. Peter's in the first quarter of the fifth century when work of an undefined nature on the fountain "*in paradiso*" is recorded in an inscription [4]. A later date for that move seems to us unlikely [5]. The lay-out of the atrium itself Paulinus describes but vaguely. However, he clearly distinguishes between the atrium and a *vestibulum*, the latter apparently in front of the church: the basilica, he says, is linked through a *vestibulum* to the projecting atrium "*...quave*, (sc. the basilica) *praetento nitens atrio fusa vestibulo est...*" [6]. This coincides with the conclusions we have drawn above based on Peruzzi's sketch and Alfarano's description. From the vestibule, the narthex — this is not expressly stated by Paulinus, but self-evident — the *regia*, the main door, leads

[1] Above, 173, fig. 396.

[2] Above, 175, fig. 757-767 and below, 271.

[3] For the Pigna, see Helbig, *Führer durch die öffentlichen Sammlungen...in Rom*, I, ed. Speier, Tübingen, 1963, no. 478. Hülsen, «Der Cantharus im Vorhof von Alt-St. Peter» *Röm. Mitt.* 19 (1904), 87 ff., has questioned the fourth century date of the canopy, wrongly we think, and maintains that the Pigna was not moved to St. Peter's prior to the ninth century. This latter contention cannot be upheld; once the four columns had been added in the eighth century (or earlier) no earthly force could have squeezed in the Pigna.

[4] Above, 173, fig. 417-432.

[5] Below, 271.

[6] Thus the reading in Migne, *PL*, 61, c. 215. The *CSEL* edition, *Sancti Paulini Nolani Epistulae*, ed. von Hartel (*CSEL* 30), Vienna, 1894, 94, renders the passage as «... *quave praetento, nitens atrium, fusa vestibulo est...*».

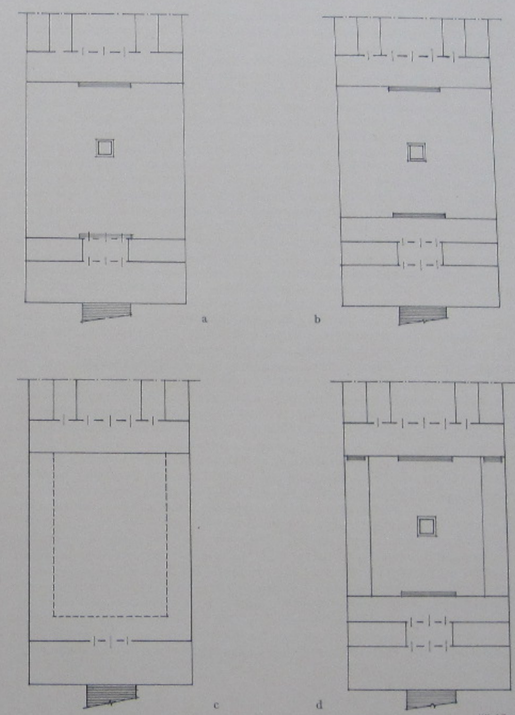


Fig. 230 a, b, c, d. St. Peter's. Fourth century atrium, hypothetical reconstructions.

into the church. Above, the façade shimmers afar bluish-green, "...*caerula eminus fronte ridentem*...". We are at a loss to interpret the passage; was the façade perhaps covered with a bluish aniconic mosaic?[1]

A find made in 1608-09 when the atrium was torn down provides further evidence. The flagstone pavement at that time was level, one recalls, from the landing to the gatehouse, into the atrium courtyard, the narthex and the basilica. However, during the demolition Grimaldi saw a mosaic floor, composed of white tesserae "in crude workmanship", he says, 2 or 4 *palmi*, 45 or 90 cm., below the flagstone pavement — he inconsistently gives the two figures at different places in his manuscript[2]. There is obviously no way to date this mosaic floor from Grimaldi's report. His reference to crude workmanship means little, and the floor may have been of fourth century or any later date prior to the late seventh century — we shall revert to the reasons for this cut-off[3]. If both the mosaic and its level — the two not being necessarily identical in origin — were post-Constantinian, the first Constantinian level of the courtyard would be yet further down. Whatever date, however, the mosaic and its level are assigned, they lie below the level of the Constantinian basilica. Steps — between three and six, depending on which of Grimaldi's figures is accepted — must have led from the mosaic floor to that higher level: either inside the *vestibulum*-narthex — assuming this to have been level with the mosaic — an unlikely solution; or, more plausibly, from the lower courtyard area paved in mosaic to the narthex, its floor being level with that inside the basilica (fig. 230a, b) — comparable to the situation found for instance in front of the basilica at Piazza Armerina[4]. Thus, in addition to the depth of the narthex as discussed before[5], its level, raised above that of a lower, mosaic-paved courtyard in front, seems to be plausibly established. Its length on the other hand and its elevation remain to be determined. Since the courtyard in the fourth century — we shall revert to it — was not yet provided with lateral porticoes, the narthex would probably have extended along the entire front of the basilica, rather than being limited — as it later was by the porticoes — to the width of nave and inner aisles alone. However, the elevation remains in doubt, both as to the number of supports and to their character, presumably columns. Likewise it remains in question whether they carried arcades or an entablature.

The appearance in the fourth century of the courtyard area in front, that is east of the narthex, must remain wholly conjectural. Nonetheless, we want to present tentatively the following considerations. The area, as suggested by the mosaic floor seen by Grimaldi, was at a level lower than that of the church and presumably the narthex. Thus the question arises whether this lower level, paved in mosaic or otherwise, extended all the way through the atrium, laterally and lengthwise; and whether, indeed, that same lower level continued outside, east of the atrium, over the landing to the top of the steps ascending from the *piazza*, the *campus*. We hesitate to entertain to its full extent this hypothesis. It would involve assuming that at a later time the pavements, both inside the atrium over its entire length and width, and outside on the landing, were raised 2 or 4 *palmi* from their original level to that of the flagstone pavements, as they survived into the early seventeenth century (fig. 211); a considerable task, involving some 10,000 cubic meters of fill. Hence, from the outset the landing in all likelihood was level with the floors in the basilica and its *vestibulum* and therefore above that of the mosaic

[1] See also below, Additional Note, 279.
[2] Grimaldi, *Descrizione*, 183 (2 *palmi*) and 362 (4 *palmi*).
[3] Below, 270 f.
[4] G. V. Gentili, *La Villa Romana di Piazza Armerina* (Itinerari...d'Italia 87), Roma, 1951, plan.
[5] Above, 261.

floor seen by Grimaldi in the atrium courtyard. Likewise, the first "single-file" entrance tract of the atrium, presumably occupied by a shallow gatehouse and flanking structures facing the landing and a portico facing the court, would have been on that higher level. Concomitantly, steps would have descended to the atrium courtyard from the landing level, corresponding to those ascending from the courtyard to the *vestibulum*. Presumably, these descending steps would have started from the western, rear edge of the entrance tract (fig. 230 a).

The boundaries of the atrium north and south along the enclosing walls raise further questions. The lateral porticoes, noted still by Alfarano, were set up only in the late fifth or early sixth century. Since the foundation walls on which their colonnades were placed were in line with the Constantinian foundations, separating the inner and outer aisles of the basilica, one is tempted to assume that they were part of an original project to have the atrium enveloped, either by porticoes or by uncovered platforms (fig. 230c). If so, the project was never carried out; for, still when Pope Hadrian late in the eighth century repaired "all the steps, the major ones which ascend in the atrium and those in the two porticoes which lead up to the church on either side"[1], the lateral porticoes must have been on a lower level, presumably that marked by the mosaic. This floor, then, in the fourth century would have extended sideways the full width of the courtyard, forming a sunken area to be reached from the higher levels both of the basilica and its narthex west and of the landing and entrance tract east (fig. 230 d).

The Cantharus-fountain in the center, as known from Alfarano and earlier records, essentially appears to have been the one described already by Paulinus. The elements composing the baldacchino surviving into the sixteenth century, porphyry columns, bronze grills, peacocks, dolphins, marble griffin plaques, all seem to have been spoils of late antique provenance, more likely to have been available in such completeness in the fourth century than at any later time. The Pigna may not have been part of this first fountain; otherwise, one supposes, Paulinus would have mentioned it. It may have come there later, though not, as we shall see, after 760. The entire fountain, standing in the sunken area may have risen on a podium, 2 or 4 *palmi* high or more. In Dosio's *veduta* (fig. 211) only the top of this podium appears to emerge from the later, raised flagstone pavement. Alternatively, it may have stood originally on a low plinth, level or nearly level with the mosaic floor. In that case, however, the baldacchino would have had to be taken apart and recomposed when lifted to the new flagstone level, an assumption fraught as we shall see with chronological difficulties.

This concludes our conjectural reconstruction of the appearance of the atrium as laid out by Constantine, or shortly thereafter, and seen by Paulinus of Nola.

b) Late fifth and early sixth centuries

However, within this tentative reconstruction, one point remains certain. The atrium, as it originally existed, had no lateral porticoes. They were added only in the later fifth or the early sixth centuries, when Pope Simplicius "through joined porticoes sheltered from the rain the path..." of the faithful[2]; an enterprise apparently completed by Pope Symmachus, who "enclosed the atrium", "...*ipsum vero atrium compaginavit*...", and decorated the *quadriporticus* — the term appears here for the first time with reference to the atrium of St. Peter's[3] —

[1] Above, 175, dig. 792-793.
[2] Above, 173, dig. 468-483.
[3] Above, 173, dig. 498-514.

with mosaic crosses and lambs and with marble, the former perhaps on the arcades of the porticoes, the latter either wall revetment or pavement [1]. Symmachus, we are further told, also enlarged the steps "*ante fores basilicae...*" and, while these could possibly be steps leading from the piazza to the landing in front of the atrium gates [2], chances are equally good or better that they were those inside the atrium leading to the narthex and the doors of the basilica. The position and function of other steps, "*...alios grados...*", likewise laid out by Symmachus right and left, *sub tigno*, under the roof, are more conjectural [3]. Since they are referred to in the same sentence as those previously mentioned and which we believe to be those leading from the sunken area inside the atrium to the narthex (fig. 230 a, b) we incline to view also those "other steps" as linked to the lateral porticoes. Presumably they are the steps leading from the roofed porticoes, *sub tigno* — still on a lower level — to the *vestibulum* in front of the aisles and repaired three centuries later by Hadrian I (fig. 230 d). An alternative reconstruction, however, would see these steps built by Symmachus as connecting the porticoes to the *episcopia*, presumably reception halls, likewise built by Symmachus right and left in the same place, "*...eodem loco...*", meaning the atrium, but obviously outside. [4]

Envisaging the fifth century porticoes on the level of the sunken area, 2 or 4 *palmi* below that of the narthex and church to the west, and of the entrance tract to the east, poses the problem of how to join their roofs to those of the narthex and entrance tract. We propose to view the colonnades of the porticoes as placed atop pedestals like those separating the aisles in Constantine's church, or simply on a parapet wall, 2 or 4 *palmi* high, and raising the eaves lines to the height of that of the narthex.

c) Further Changes

By the eighth and ninth centuries, the atrium by and large consisted of the elements still known from sixteenth century records. In the second quarter of the ninth century the biographer of Gregory IV lists its main constituent elements [5]: the "*porticus ... quae super gradus...*"; the atrium façade, possibly opened in porticoes; the oratory on the upper floor of the gatehouse, identified as S. Maria Mediana — elsewhere also as S. Maria in Turri or S. Maria ad Grada or in Gradibus [6]; the narthex in front of the basilica doors, "*...porticum ante valvas argenteas...*"; and the façade of the basilica with its old mosaic, in need of repair. The changes that led to this, its final appearance, seem to have taken place in successive phases not easy to disentangle.

The entrance wing of the atrium presents the first problem as to original appearance and later changes. We have seen that a wall with entrance gates, facing landing and piazza and dating from the fourth century, stood on the site and was presumably later incorporated in the front wall as still seen in the sixteenth century. We have also proposed three possible alternatives for envisaging the space extending behind this wall inside the atrium, based on the transversal bisection of the wing by walls and pilasters, carrying an arch (?) as shown in Alfarano's plan, and on the proportions of the atrium courtyard. One solution envisaged in the first outer section of this space, right behind the entrance wall, a portico equal in level to that carrying the narthex at the opposite end of the atrium; the inner section as presented in Alfarano's

[1] Above, 173, dig. 498-514.
[2] *LP*, I, 267, note 24.
[3] Above, 173, dig. 498-514.
[4] Below, 279, Additional note.
[5] Above, 175 f., dig. 827-844.
[6] See *LP*, III, Index, 327 ff.; the designation «*inter turres*» does not occur prior to the twelfth century.

plan would have been added later. An alternative reconstruction would envisage the section as occupied from the outset by a gatehouse, flanked by lower subsidiary structures and as tall as the one seen in the sixteenth century *vedute*, but only half as deep, 40 instead of 81 or 81½ *palmi*; and, facing the courtyard, a portico [1]. Finally a third alternative suggests as original the bisection of the wing and the doubled depth of the gatehouse. We tentatively propose the reconstruction with a shallow gatehouse and flanking structures, backed by a portico (fig. 230 b).

Such a tall shallow gatehouse in the front wing of the atrium finds a parallel in that of the north church of the Constantinian cathedral at Trier, as viewed by the excavator [2]. That the one we envisage at St. Peter's was likewise Constantinian is possible, but there is no proof, nor can we tell when this early, shallow gatehouse — if it existed — was extended westward in the form seen by Alfarano. However, it is certain that the gatehouse in its final form was flanked by lower structures; that these structures inside, facing the atrium, formed triple-arcaded exedrae; that the entrance-way of the gatehouse was surmounted on the upper floor by a chapel; and that this final stage, including presumably the triple-arcaded exedras, antedated the middle of the eighth century. The gatehouse chapel was known variously as S. Maria *in Gradibus* from its location overlooking the steps; S. Maria Mediana, from its location in the middle of the atrium front; or S. Maria in Turri, later occasionally *inter Turres* or *in turribus* [3]. Its façade, above the gates, was decorated by Paul I with a mosaic, remains of which survived until 1608-1609 [4]. Paul I, around 760, installed a small shrine (*oraculum*, as against *oratorium*, chapel) dedicated to the Saviour, "*...in atrium ante turrem sanctae Mariae ad Grada...*", that is placed against the west wall of the gatehouse facing the atrium [5]; on this wall, indeed, existed a mosaic of the Saviour, later replaced by Giotto's Navicella [6]. Hence, the Tower of Saint Mary above the Steps, meaning the gatehouse and its chapel, antedated Paul's pontificate, 757-767. The time of its construction remains undetermined, however, as does unfortunately the date of the Saviour mosaic on its the west wall; the biography of Paul I in the *Liber Pontificalis*, as quoted, again only provides a *terminus ante*. On the other hand, the importance and function of the chapel and gatehouse from the eighth through the twelfth centuries, as the site of arbitration proceedings and of the reception of royalty, is attested to time and again: by the placing of the bronze doors brought from Perugia by Hadrian I "*...in basilica beati Petri...ad turrem*" [7] — in the twelfth century they are referred to as "*...super gradus...in introitu sanctae Mariae inter turres*" [8]; by papal gifts made for the altar of the chapel [9]; by the reception (in the chapel or in the porch?) of Frederick Barbarossa "*...ascendens ad ecclesiam sanctae Mariae in turri...*" with the pope expecting him at the altar [10].

The outside of the gatehouse as it stood in the sixteenth century is known from Heemskerck's and other *vedute* (figs. 213, 214) [11]. They show on the groundfloor traces of a vaulted porch,

[1] Above, 261.
[2] Kempf, in *Frühchristliche Zeugnisse im Einzugsgebiet von Rhein und Mosel*, ed. W. Reusch, Trier, 1965, 222.
[3] *LP*, I, II, *passim*; Hülsen, *Chiese*, 345, 372.
[4] Above, 169 f., Ancient Illustrations, 1532-1536 (our fig. 213), ca. 1605 (our fig. 214), 1620.
[5] Above, 175, dig. 757-767.
[6] Paeseler, «Giotto's Navicella...», *Römisches Jahrbuch für Kunstgeschichte* V, (1941), 49 ff., esp. 76 f. and 160 ff., interprets the sources correctly in our opinion. We cannot agree with the interpretation of the building history, as proposed by Belting, «Das Fassadenmosaik von Alt St. Peter in Rom», *Wallraf-Richartz-Jahrbuck* 23 (1961), 37 ff.
[7] *LP*, I, 514.
[8] Mallius, *Historia Basilicae Antiquae*, *AA.SS. Junii*, VII, 49.
[9] *LP*, II, *passim*.
[10] *LP*, II, 392.
[11] Meyer-Barkhausen, «Die Frühmittelalterlichen Vorbauten am Atrium von Alt-St-Peter in Rom...», *Wallraf-Richartz-Jahrbuck* 20 (1958), provides a thorough analysis of the graphic sources. A number of observations made by him correspond to our own; but we cannot agree with his reconstruction proposal.

sheltering the three portals: wall arches, rising from columns placed between the doors and intended to carry three vaults; but it is questionable whether the porch was part of the original structure or added later, possibly in the fourteenth century [1]. The three were portals surrounded by marble frames, their architraves being inscribed with the name of Nicholas V, in 1449; also wooden doors were substituted for the old bronze doors set up by Hadrian I [2]. The width of the gates at the time was probably but little, if at all, changed, and UA 11' presumably still renders their original proportions, separated by elongated rectangular piers; however, Peruzzi in that sketch noted only the thickness of the piers (and thus of the surmounting wall), 5 *palmi*, not their widths; the width of the gates and thus the total width of the gatehouse elude us. Heemskerck's *veduta* also shows small, round-arched windows on the upper chapel floor, overlooking the piazza; the traces of the mosaic of Paul I, above and reaching down between the windows, give the impression of the mosaic having blocked the windows, one more reason to date gatehouse and chapel prior to Paul I. Another important feature is a seam in the masonry, noted by Heemskerck, at the left-hand edge of the gatehouse which sets off its upper floor — but only that — from the adjoining structure south. The gatehouse, then, originally must have towered above the lower flanking buildings in the atrium front — the *turris sanctae Mariae*, or simply the *turris*.

Inside, the groundfloor of the gatehouse appears to have been vaulted. This at least seems to us the meaning of the passage in the biography of Leo III that he restored the nave, the transept, the *quadriporticus*, the fountains and the vaulted tower, "... *turrem cum cameris suis...*" [3]. The piers, subdividing its depth into two bays, as seen in UA 11' and Alfarano's plan, were presumably remnants of the western rear wall of the first shallow gatehouse. They may have carried an arch. Also, the eastern bay possibly communicated laterally through other arches with the flanking structures. The arched openings, awkwardly marked by Grimaldi in his drawing on either side of the gatehouse façade, could well be meant to record such lateral openings. The chapel on the upper floor had a wooden ceiling [4].

The structures flanking the gatehouse can be envisaged only vaguely. Inward, the triple-arcaded exedrae facing the courtyard, as shown on Alfarano's plan and discussed in his text, may, but need not, be of the same period of construction as the gatehouse in its final pre-mid-eighth century form. In any event, they would be the *porticalia* referred to at the time Barbarossa's soldiery in 1167 burnt down "... *S. Mariae in turri ecclesiam cum eis portis et vicinis porticalibus...*" [5]. Of the outer rooms flanking the gatehouse front, little can be said. The sixteenth century *vedute* show them with what seem to be solid walls. What they originally looked like is a question which, like others, must remain open.

The changes that after the fifth century occurred inside the atrium are yet harder to establish as to date and sequence. The major alteration consisted, of course, in raising the level in the sunken area, including the lateral porticoes, to that of the narthex and entrance tracts and in placing on the new level a continuous flagstone pavement — an operation of some magnitude. It has been attributed as a rule to the late seventh century on account of a passage in the biography of Pope Donus stating that he paved the "*atrium superiore qui est ante ecclesiam*

[1] *Ibid.*, 18, note 40, referring to EHRLE and EGGER, *Piante e vedute del Vaticano, Tavole, I*, ed. Frutaz, Vatican City, 1956, pl. IV, 2.
[2] MUENTZ, *Les arts à la cour des papes*, I, (Bibliothèque des Ecoles Françaises à Athènes et Rome, 4), Paris, 1878, 120, note 3.
[3] *LP*, II, 1. BELTING, *op. cit.*, 49 ff., interprets the mention of a *turris* in this passage to refer to a predecessor, supposedly built by Stephen II, of the tower shown in sixteenth century *vedute* adjoining the gatehouse. There is no proof that an Early Christian or medieval tower ever preceded that campanile. PARSELER, *op. cit.*, 75 f., correctly refutes this opinion and points out that the tower of Stephen II, presumably wooden, rose *super basilicam*, and that the repairs undertaken by Leo III refer to the gatehouse itself, S. Maria in Turri.
[4] Above, 175 f., dig. 827-844.
[5] *LP*, II, 426.

in quadriporticum magnis marmoribus..." [1]; the "higher atrium in front of the church in the *quadriporticus*" has been understood to refer to the area enclosed by the four porticoes, and raised to their higher level, hence "*superiore*". In an alternative interpretation, however, taking *verbatim* the expression "*ante ecclesiam*", the "*atrium superiore*" would be understood as the narthex, thus assuming that still in the late seventh century the center area of the atrium remained at a lower level. Indeed, as evident from the reference to steps ascending from the lateral porticoes to the level of the basilica still in the late eighth century [2], the porticoes and with them obviously the sunken center courtyard still remained at a lower level a century after Pope Donus (fig. 230 d). The atrium thus was lifted to the higher level and given its flagstone pavement at a later period postdating even the eighth century.

Raising the level of the courtyard area, whenever it took place, involved changes in the fountain and its baldacchino. We recall the two alternatives discussed before in regard to its placing: either level or nearly so with the sunken area; or raised from the outset on a platform, approximately level with the pavement of the narthex. In the latter case, the platform would simply have been buried nearly to its top. This could have occurred at any time without affecting the fountain and baldacchino. In the former case, on the other hand, the fountain and baldacchino had to be dismantled and recomposed on the higher level. Such a major undertaking apparently took place when shortly after the middle of the eighth century Pope Stephen II brought the number of columns in the baldacchino from four to eight which he placed on *quadra* — meaning plinths? — and erected over them a bronze roof [3], thus creating the canopy extant eight hundred years later. The Pigna on the fountain obviously must have been brought there prior to the alterations undertaken by Stephen II; it could not have been moved in through the narrow intercolumniations of the eight-columned baldacchino. Taking apart and recomposing the baldacchino could, of course, have been done at any time if the fountain stood on a platform raised above the sunken area. If, on the other hand, there was no such platform, dismantling and recomposing it could be taken to date the simultaneous raising of the courtyard area. Since the sunken area survived through at least the end of the eighth century three conclusions become inevitable: the baldacchino from the outset rose on a platform; the alterations undertaken by Stephen II antedate the raising of the pavement level over the entire area of the atrium; and the date of that major alteration can be fixed only by a *terminus post*, the pontificate of Pope Hadrian I, 772-795.

The Basilica

The aspect of the basilica in the fourth century must have been impressive, notwithstanding the hodge-podge of columns, bases and capitals, all spoils, that made up the nave colonnades. The size alone was overwhelming, one third larger still than the Lateran basilica; understandably so, since it combined its function of an assembly hall for the resident congregation with those of a martyrium, a pilgrimage church, a covered cemetery and a hall for funeral banquets. The nave, well lit by its eleven windows — though not as bright as S. Paolo f. l. m. or, possibly, the Lateran — was flanked on either side by the foil of comparatively dark aisles. It led forward forcefully to the triumphal arch, beyond which extended the key elements of the building and its *raison d'être:* the transept, the apse and, on the apse chord, the shrine of the Apostle. Apse and transept, the latter rising to a level much lower than the nave, formed a

[1] Above, 175, dig. 676-678.
[2] Above, 175, dig. 792-795.
[3] Above, 175, dig. 752-757.

separate unit, set apart by columnar screens from the aisles and the terminating exedrae (fig. 229). The Shrine of the Apostle was sheltered beneath the colonnaded *fastigium*, the latter easily reconstructed from the remains surviving and the representation of it on the Pola casket (fig. 223). The place of the altar, possibly movable, remains undetermined. The apse vault was covered with gold foil; only in the latter part of the fourth century was it provided with a figural mosaic probably showing the *traditio legis*[1]. Whether or not the walls of the transept were covered with mosaic, as the inscription on the gold cross[2] may suggest, had best be left open. The aisle walls, as witness Panvinio, carried marble revetment, presumably from the outset[3]. The original decoration of the nave walls, if any, in unknown; only under Leo the Great, it seems, were they covered with murals. On the other hand, the triumphal arch — witness its inscription[4] — appears to have borne a mosaic. Around 1500 it included the figure of Constantine offering a model of the church to Christ and St. Peter[5]. But we rather suspect that the figures had been inserted during a re-working in Carolingian times. The pavement, certainly of the transept, was formed of marble plaques and it is possible this paving continued into the nave as well. Likewise, a coffered ceiling, apparently gilded, is documented for the end of the fourth century, at least in the transept, as witness Prudentius[6]. By the early seventh century[7], such a ceiling covered the nave as well, but this may, though it ned not, have been a later addition.

G. CHRONOLOGY

1. The Constantinian church

Documentary and archaeological evidence coincide in assigning the building of St. Peter's to the reign of Constantine: the account of the *Liber Pontificalis*; the inscriptions inside, naming him as the founder, on the triumphal arch, on the arch of the apse, on the gold cross placed over the shrine; the bricks stamped with his name, found *in situ* in the apse wall; and the general character of the technique of construction. It is harder to determine when within that span of nearly twenty-five years, October 312-May 337, building was begun; when it was finished; and which parts, if any, were added, either by Constantine himself or later, once the basilica proper had been completed. Changes in the building occurring prior to 850, the period this work is concerned with, raise secondary, though by no means unimportant, issues.

Three dates are reasonably well-established for work at St. Peter's as *termini post, ad* or *ante* within the quarter century of Constantine's reign:

317-319. A small bronze coin was found inside the ash-urn of one Trebellina Flacilla — untouched until opened by the excavators — in mausoleum T of the necropolis below the transept of the old basilica close to and southeast of the shrine. The coin has been dated 317-318 or possibly 319[8]. At that time, then, or possibly slightly later, the necropolis was still

[1] Kollwitz, "Christus als Lehrer und die Gesetzübergabe an Petrus in der konstantinischen Kunst Roms", *R. Q. Schr.*, 44 (1936) 45 ff.; Davis-Weyer, "Das Traditio-Legis-Bild und seine Nachfolge", *Münchner Jahrbuch der bildenden Kunst*, 12 (1961) 7 ff.

[2] Above, 172, dig. After 324 and before end 329.

[3] Above 227.

[4] Above, 171, dig. After autumn 324, b.

[5] Above, 171 f., dig. after autumn 324, b.

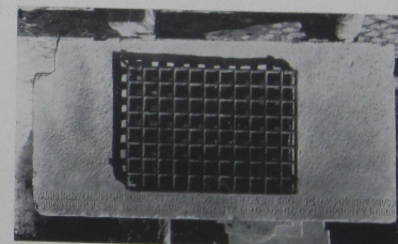
[6] Above, 173, dig. *ca.* 400.

[7] Above, 174, dig. 625-638.

[8] Guarducci, «Una moneta...», *Rendic. Pont. Accad.* 39 (1966-67), 135 ff. with reference to Bruun, *The Roman Imperial Coinage*, VII, London, 1966, nn. 249, 149 ff.

in use. Hence, 317-319 is the *terminus non ante* for the start of construction of the church and the concomitant demolition of the pagan mausolea. Since coins remain current for some time after being issued, obviously work on St. Peter's may just as well have been begun a few years after 317-319. Could the fourteenth (?) century inscription (fig. 231) which dates the division of the bones of the Apostles to 319, record some lost tradition?

324. The list of donations made by Constantine to St. Peter's consists entirely of income from estates located in and near Antioch, Alexandria and elsewhere "*per diocesem Orientis*"[1]. Clearly, he could dispose of such property only after the eastern half of the empire had fallen to him with the defeat of Licinius in September 324. Hence, that date is the *terminus non ante* for his endowment of the church[2]. Since St. Peter's, in fact, is the only Constantinian foundation in Rome to be provided with income wholly from the East — except that is, one smallish donation to the *memoria* of Saint Paul[3] — the endowment to St. Peter's looks much like an offering brought by Constantine as a thanksgiving for the victory that had made him master of the east as well, and thus of the whole empire.



(R. F. S. P.)

Fig. 231. St. Peter's. Fourteenth century inscription(?) referring to the year 319, the division of the bones of the Apostles.

The temptation is great indeed to view St. Peter's, as it was completed and endowed, as such a thanksgiving and thus to bring it close to a date late in 324[4]. The mosaic inscriptions read both on the arch of the apse and on the triumphal arch support such a hypothesis[5]. The former, to be sure, is fragmentary and the remains only speak of Constantine's having defeated — *expiata incursione* is the term used — a hostile invasion. The invader remains unnamed.

[1] *LP*, I, 177 f.; see above, 171, dig. Autumn 324 or after.

[2] Above, *ibid.*

[3] *LP* I, 178. The genuine part of the endowment made by Constantine to S. Paolo is apparently the listing of the single estate near Tarsus. The long list of landed donations following that entry seems to be added in an attempt to place on an equal level the churches of the two *principes apostolorum* in Rome; see above, 97, dig. 314-335 (or 337-34?).

[4] In the past I took the year 324 to mark the beginning of construction at St. Peter's, see for instance, «The Constantinian Basilica», *D.O.P.* 21 (1967), 115, ff. In going afresh over the evidence, I have become convinced that construction was started somewhat earlier. However, the lavish endowment bestowed in 324 still reflects the *ex voto* character of the church, though already under construction (R.K.).

[5] Above, 171, dig. after Autumn 324, a) and b).

However, given also the expiatory character of his defeat, he can be none but an " usurper " — Licinius presumably, since a reference to Maxentius that long after the Milvian Bridge is unlikely; defeated enemies, as is well known, are always classified as invaders. The inscription on the triumphal arch speaks more clearly. Constantine addresses Christ, the leader through Whom the world rose to the stars "*surrexit ad astra*" (the overtones of resurrection are unmistakable) and for Whom he, victorious, founded or built, "*condidit*", the church. The meaning is best understood, it seems, in the context of the victory over Licinius, as viewed by Constantine and recorded by Eusebius [1]. The war was a crusade waged against paganism and its champion. Constantine himself told Eusebius how the cross standard, the *labarum*, τὸ σωτήριον τρόπαιον, the sign of Salvation, had brought victory wherever carried in battle. In his chapel-tent, with the counsel of the Lord, Θεοῦ βουλῇ, he had decided on the right strategy and upon leaving it was sure of victory [2]. In short, Christ had guided him; He was the leader, the *dux*, who resurrected to Christianity the world, meaning the whole empire. He had made Constantine the master of the world and, indeed, through that victory, Constantine felt himself finally to be just that — as witness his coinage, or for that matter the title of *Augusta* conferred on the Imperial ladies, his wife Fausta and the dowager Helena, November 8, 324, possibly another thanksgiving. For Christ then, the dedicatory inscription says, he built or endowed or founded — *condere* has all these meanings — St. Peter's as a thanksgiving. And, following old custom, the endowment came from the spoils of war, *ex manubiis*.

The character of the endowment, in any event, coincides with the wording of the dedicatory inscriptions and both cannot date prior to the late fall or early winter of 324. Construction nonetheless might have started before. The income from landed endowment customarily is intended, rather than for the building of a church, for its maintenance and that of its clergy, *in servitio luminum* [3]. At times, such a donation was apparently made coincident with the foundation; the Lateran church as well as its baptistery seem to provide examples [4]. At other times, though, it came after the building had been completed, as witness the *Charta Cornutiana* [5]; and there is no reason why the endowment for maintenance could not have been deeded while construction was under way.

Hence, the *terminus non ante*, autumn 324, for the endowment of St. Peter's and the wording of the dedicatory inscriptions need not coincide with the foundation or the beginning of work. Both might, though they need not, date a few years before.

329. The inscription inlaid on the gold cross placed over the Shrine of Saint Peter named both Constantine and his mother as donors: "CONSTANTINUS AUGUSTUS ET HELENA AUGUSTA HANC DOMUM REGALEM SIMILI FULGORE CORRVSCANS AVLA CIRCVMDAT". Helena died late in 329 [6]. As recorded, the inscription is obviously fragmentary. A few words are missing between *regalem* and *simili*, possibly *ornarunt quam* [7]. If correctly interpolated, the meaning thus would be that the shrine, the *domus regalis*, richly decorated, was enclosed in a hall, also shining with splendour; and even if the interpolation read somewhat differently, the reference to the shining decoration of the basilica remains unchanged. Thus, by the time the cross was donated, construction work at St. Peter's was terminated; and the decoration — mosaic, marble revetment, presumably gilded coffered ceiling — had been decided on and was possibly well

[1] EUSEBIUS, *Vita Constantini*, II, c. 5 ff. (MIGNE, *P.G.* 20, 982 ff.; *Die griechischen christlichen Schriftsteller*, I, ed. HEIKEL, 43 ff).
[2] *Ibid.*, c. 6 and 7 (MIGNE, *ibid.*, col. 988).
[3] *LP* I, 173, referring to the Lateran basilica; see also DUCHESNE, *ibid.*, CXLV.
[4] *LP* I, 174 ff.
[5] DUCHESNE, *ibid.*, CXLVI ff.
[6] *LP* I, 177; above, 174, dig. After 324 and before end 329.
[7] DE ROSSI, *Inscriptiones*, II, 1, 200.

advanced or even completed. Since Helena died presumably late in 329, a *terminus ante* for the completion of construction and at least a *terminus ad* for the decoration are given. Concomitantly the Augustas' title conferred on the empress dowager on November 8, 324 provides a *terminus post* for the donation of the gold cross. Could one be certain of Fausta's having been a Christian, the omission of her name from the dedicatory inscription would move the *terminus post* to early summer 326, the presumable time of her execution [1].

The *terminus post* for the beginning of construction can be confirmed, it seems, by one more consideration and possibly moved a few years later. As pointed out first by Enrico Josi, there is a good likelihood that work was started some time between 319 and 322 [2]. The argument runs as follows. When in 1618-1619, the foundation was dug for the south campanile of New St. Peter's, eight altars were found, all recording in dated inscriptions sacrifices of bulls and rams, *taurobolia* and *criobolia*, as customarily offered annually to the Great Mother and other Phrygian divinities. Few have survived, but all have been described and drawn by Grimaldi [3]. The altars were lying in a heap, four and a half (or seven?) meters [4] below ground and smashed to pieces apparently when the Phrygian sanctuary, the *Phrygianum*, was demolished by a mob at the time of the final suppression of paganism in Rome, 395. Hence its site and that of the altars was presumably right there, close to the south flank of the atrium of Old St. Peter's. Finds of some more Phrygian altars nearby were reported in the fifteenth and sixteenth centuries: near S. Maria della Febbre, that is the westernmost mausoleum rotunda, or in the chapel of St. Gregory, by the steps of the atrium [5]; at S. Petronilla, on the site of the south arm of New St. Peter's [6]; at an unidentified site nearby [7]; in S. Michele e Magno in Borgo [8]. The dates given in the inscriptions range from 305 to 390, with a gap from 319 to 350, the only gap that long in the series. Concomitantly, an inscription in the ex-Lateran Museum, long known, but unfortunately undated, speaks in mystifying terms of a night twenty-eight years long having ended and a *taurobolium* having been offered anew to the Phrygian gods [9]. Hence, it has been plausibly suggested that the twenty-eight year interruption of sacrifices lamented by the Lateran inscription falls into the thirty-one year gap in the series of dedicatory altar inscriptions between 319 and 350. The argument concludes by proposing as the cause of the interruption of services the start of construction at St. Peter's and the ensuing disturbance and thus arrives at a date 350 (or up to three years before), less 28, that is between 319 and 322, for the beginning of work on the basilica. Since sacrifices were brought in 319 and 350, one could even argue in favor of a gap of twenty-nine, rather than thirty-one years, 320-349, into which to fit the twenty-eight years interruption of sacrifices, thus arriving at a date in 320 or 321 for the start of construction. But in Roman dating as a rule, the last date, 350 in this case, is counted, rather than being excluded; and anyhow, it makes no sense putting too fine a point to the argument. A date between 319 and 322 is good enough.

However attractive the proposal, caution is called for. As pointed out by Toynbee and Ward Perkins, the series of the dated altars known is irregular and their number small — eleven in all. Out of these, eight date between 370 and 390, while the other three are widely spaced,

[1] ZOSIME, *Histoire Nouvelle*, I (Collection Budé), Paris, 1871, 219 ff., note 39.
[2] JOSI, *Rend. Pont. Accad.* 25-26 (1949-51), 4, and *C.R.A.I.*, 1950, 434 ff.; GUARDUCCI, *Cristo e San Pietro*, 65 ff.
[3] GRIMALDI, *Descrizione*, 309 ff., 422, 500 f. and figs. 168-171; C.I.L., VI, 1, 497-503.
[4] GRIMALDI, *op. cit.*, 309, speaks of twenty *palmi*; in Vat. lat. 6438, f. 43v, of thirty.
[5] *C.I.L.*, VI, 1, 504; also MAZOCHIUS, *Epigrammata antiquae urbis*, Rome, 1521, c. 165v. The site is differently given.
[6] *C.I.L.*, VI, 30780.
[7] DE ROSSI, *Inscriptiones*, I, 35; C.I.L., VI, 1, 508.
[8] GRIMALDI, *op. cit.*, 500 f., f. 488v.
[9] MARUCCHI, *Diss. Pont. Accad.*, ser. 2, XV (1922), 171 ff.; FABRE, « Un autel du culte phrygien au musée du Latran », *Mél. Ec. Franc.* 40 (1923), 3 ff., *Not. Sc.*, 1922, 81.

in 305, 319 and 350 [1]. Also, the meaning of the Lateran inscription is far from clear. Marucchi and Fabre have given interpretations differing from each other as well as from Josi's [2]; moreover it is undated and could possibly be referred to some time in the third century [3]. Finally, it might be argued that construction at St. Peter's must have stopped prior to 329; it could not have interfered with services in the *Phrygianum* until 350. Nonetheless, the hypothesis is plausible. Services at the pagan sanctuary would have naturally been interrupted as the neighborhood was turned into a noisy, dirty construction site. The civil authorities need not have forbidden services; the *praefecti urbi* were pagan, after all, until 326. In accordance with the policy of religious tolerance pursued by Constantine up to then [4], the authorities may simply have asked for the right of way through the *Phrygianum* for the duration of construction [5]. The change in this policy towards greater intolerance around 324 might well explain why the worshippers of the Phrygian divinities thought it unwise to return to their sanctuary even after construction on St. Peter's had ended in or before 329. On the whole, then, we consider the *Phrygianum* argument as a valuable supplement to those establishing a starting date for Constantine's basilica, shortly after 319 and prior to 324, possibly 320-321.

The outer limits for the construction and completion (or near-completion) of the Constantinian basilica are thus set. Work could not possibly have started before 317-319, the date of the coin found in mausoleum T. A *terminus post*, 319-322, and possibly 320-321, is more likely in view of the *Phrygianum* argument. Endowment and composition of the dedicatory inscriptions in the church date after September 324, but possibly not much later, coincident with the solemn raising in November of the Imperial ladies to the rank of *Augustae* by the new master of the world. The gold cross, finally, was donated after 324 — possibly after 326, the date of Fausta's death — and before Helena's death, late in 329. Its inscription supplies, we think, a *terminus ante* for the completion of construction and a *terminus ad* for the decoration of the basilica.

Construction thus would have taken not more than seven or eight years and possibly less. This at first seems an incredibly short time. Grading and draining the hill alone, building up and terrassing the platform to carry the structure must have employed an army of laborers and required a vast amount of time; this even before the huge basilica and its adjacencies were started requiring the building of some 30,000 cubic meters [6] of concrete faced with brick or *opus listatum*. The feat is less astonishing, however, once one remembers the time spent in building the Basilica Nova of Maxentius. Begun in 309, it was completed by October 312, except for some of the decoration and the north apse added by Constantine. Moreover, with its massive piers, its vaulting system and buttresses, the Maxentian Basilica was a structure far more complicated to build and demanded greater technical skill on the part of both architect and workmen than was required at St. Peter's. There, the simple plan, the thin walls, the straight colonnades, the truss roof — none posed major technical problems. Nor was any time spent on preparing the architectural sculpture. Capitals, shafts, bases and pieces of entablature were nearly all spoils, removed from older abandoned buildings. Rather than having them designed and executed over many months by a small army of sculptors, they had only to be collected, brought to the building site and adjusted as best possible to form some kind of order — the main problem

[1] TOYNBEE-WARD PERKINS, 191 f. and 230, note 5.
[2] Above, 275, note 8.
[3] MARUCCHI, *op. cit.*
[4] ALFOELDI, *The Conversion of Constantine...*, Oxford, 1948, *passim.*
[5] CARCOPINO, *C.R.A.I.*, 1950, 435.
[6] Above, 172, dig. 333.

being to keep level their total height. Nor was the non-architectural decoration very time-consuming once construction was completed: building the coffered ceiling of the nave and gilding it; covering in gold foil the apse vault; laying the pavement. None need have protracted work on the basilica much beyond 329.

2. Additions and changes

a) The Atrium

It remains an open question whether or not the atrium as seen by Paulinus towards the end of the fourth century was of one build with the basilica. No doubt some kind of atrium, whatever its plan, was projected from the outset. But it is uncertain that it was also built at that time. Actual construction may have begun only after work on the basilica was terminated and it may have taken another few years, the more so since Constantine had removed himself and withdrawn his interest from Rome. Were one to acknowledge the link suggested between the amnesty for *violationes sepulchri* antedating 333 and construction at St. Peter's, one might refer that date to the termination of work in the atrium; mausolea and graves did extend into that area [1]. Nonetheless, a post-Constantinian, fourth century date is equally possible.

b) Later changes

The architectural changes occurring from the fifth through the ninth centuries and later, as far as relevant in our context, affected largely the atrium. They have been discussed extensively in a preceding section, including their chronology, both ascertained and plausible [2]. Within the basilica, alterations over the centuries concerned primarily decoration, furnishings and repairs; they are of but minor interest within the limits of this study. Only two major structural changes appreciably affected the plan and design of the building in the period that concerns us: the building of an annular crypt below the apse with the lifting of the apse level; and the raising, to the full height of the transept, of the walls of the north exedra.

One recalls the lay-out of the crypt and the concomitant raising of the apse level: a semicircular corridor running along the inner curve of the apse; a straight corridor issuing perpendicularly at the apex of the curved corridor, leading to a confessio-chamber; the floors slightly sunken into the Constantinian level, its ceiling rising 1.45 m. above and correspondingly raising the apse level; the Constantinian Shrine buried below the new level; the confessio-chamber touching the rear of the buried Shrine; steps descending from the transept into the crypt, others ascending to the new apse level; marble plaques facing the front of the apse podium placed between Constantine's vine columns, rearranged in one line; finally an altar on the new level of the apse; and a *fenestella* at its foot, through which to view, though dimly, the Shrine [3]. A vague *terminus post* is provided for the raising of the apse level by an epitaph

[1] *Carta Archeologica di Roma*, I, Florence, 1963, text, 56 f.
[2] Above, 267 ff.
[3] Above, 174, dig. 589-590, and 259.

of 407, reused in repairing the Constantinian pavement and covered by the new apse podium[1]. But the chronological margin is far too wide. More precisely, the new arrangement has often been attributed to Gregory the Great who "made it possible to say Mass over the body of Saint Peter"[2]. The authors of *Esplorazioni* have cast doubt on this dating and proposed instead to credit Pelagius II, Gregory's predecessor, with building the crypt, and Gregory with erecting the altar on the upper level[3]. The argument is based, somewhat precariously, on the style of the marble plaques facing the apse podium, and on a letter of Gregory's stating that Pelagius had "intended to change the silver over the body" of the Saint[4]; but it does not say whether or not Pelagius, though this seems implied, stopped the work. Another passage is equally ambiguous. A deacon of Gregory of Tours, in Rome 589-590, the year before Pope Gregory was elected, described to his bishop the arrangement at St. Peter's: the visitor of importance, admitted inside the chancel screens, approached "the tomb, placed below the altar"; a *fenestella* was opened for him and, putting his head inside, he offered his prayer and, if he wanted, lowered onto the tomb a weighted cloth strip to be taken home as a *brandeum*, a relic by contact[5]. At first reading, the description appears to reflect precisely the one envisaged in *Esplorazioni* and paraphrased by us: chancel screens, tomb below the altar, *fenestella*. In that case, obviously, the entire arrangement would antedate Gregory's pontificate; moreover, the description says nothing whatever of the annular crypt — a feature the Frankish deacon would hardly have passed over in silence. On the other hand, prior to building the crypt and raising the apse level, no stable altar could possibly have risen, properly speaking, "over the tomb" on the Constantinian level; the Shrine, after all, emerged above ground right over the tomb. An altar, to be sure, may have been attached to the front of the Shrine. But no trace has been found of such a stable altar; also, a *fenestella* in the frontal of the altar would have been a meter or so distant from the perpendicular over the grave. Nonetheless, we incline to think that this was the situation known to the deacon from Tours, and that therefore only after 589-590 was the crypt built, the apse level raised and the altar placed perpendicularly over the tomb[6]. On the other hand, St. Peter's clearly is the fountainhead for the spread of annular crypts, as witness the 'copies' of St. Peter's in Carolingian architecture, as well as before and after. The first such copy, S. Pancrazio in Rome, 625-638, thus provides a likely *terminus ante* for the annular crypt at St. Peter's[7]. Hence, assigning the crypt and new apse level at St. Peter's, rather than only the altar, to the pontificate of Gregory and generally to the years around 600 is plausible, if unproven.

The date, on the other hand, when the walls of the north exedra were raised to the height of the transept walls, is unequivocal. As pointed out by Christern with reference to the late Don Paolo Künzle, the biography of Hadrian IV, 1154-1159, states that the pope repaired the roof of the south exedra, known then as the chapel of S. Processus, and "above the oratory of S. Giovanni in Fonte" — meaning the north exedra — "raised the wall on three sides thus making it equal to the nave" — that is the transept — "of the church"[8].

[1] *Esplorazioni*, 172.
[2] Above, 174, dig. 590-604; see also Nussbaum, *Der Standort des Liturgen am christlichen Altar...*, Bonn, 1965, 229.
[3] *Esplorazioni*, 188 ff., 193.
[4] Gregory, *Epistulae*, IV, ep. 30 (*MGH*, Epp. I, 264; also Migne, *PL* 77, col. 701): «... *dum beatae recordationis decessor meus, quia argentum quod supra sacratissimum corpus sancti Petri apostoli erat longe tamen ab eodem corpore fere quindecim pedibus mutare voluit, signum ei non parvi terroris apparuit*».
[5] Above, 174, dig. 589-590.
[6] Nussbaum, *op. cit.*, 228 f.
[7] *Corpus*, III, 263, 171, 174; also Apollonj-Ghetti, «La Chiesa di S. Maria di Vescovio», *RAC* XXIII-XXIV (1947-48), 253 ff., esp. 279 ff.
[8] Above, 176, dig. 1154-1159.

Additional note

While this volume was being printed, Jean-Charles Picard published an article about the quadriporticus of St. Peter's[1]. His conclusions in large part coincide with ours, so we need only sum up a few points where they diverge.

In the letter written by Paulinus of Nola[2], he interprets the word *caerula* referring to the façade to mean brick red, rather than blue, which we find possible, though not wholly convincing; and he takes *ianua atrii* to refer to the doors leading from the atrium into the basilica, a point on which we disagree. The *porticus iuncti* of Simplicius[3] Picard believes to have been the one leading to the Tiber, rather than the lateral porticoes of the atrium — erroneously we think because of the plural used; also *compaginare*[4] to our knowledge hardly ever means "to pave". On the other hand we find plausible, though not cogent, the hypothetical identification, also considered by us, of the *gradus sub tigno dextra laevaque*[5] with the stairs marked on Alfarano's plan, the one ascending from the south to the platform preceding the atrium, the other continuing from there north and uphill. We leave open the question as to whether the pavement seen by Grimaldi inside the atrium[6] dated from prior to the seventh century or was a Cosmatesque medieval floor, as Picard suggests; and whether the columns at the gatehouse of the atrium[7] were indeed Constantinian.

[1] Picard, "Le quadriporticus de Saint-Pierre du Vatican", *Mél. Ec. Franç.* 86 (1974), 2, 851 ff.
[2] Above, 173, dig. 396.
[3] Above, 173, dig. 468-483; also above, 266.
[4] *Ibid.*, also above, 266 f.
[5] *Ibid.*, also above, 267 f.
[6] Above, 264 f.
[7] Above, 269.

HISTORICAL POSITION

THE LATERAN BASILICA, ST. PETER'S, S. PAOLO f. l. m.

The three churches discussed in this volume represent two stages of very different character in the development of the Early Christian basilica in Rome. The Lateran basilica, begun in 312 or 313, and St. Peter's on the Vatican Hill, built we think between 319-22 and 329, reflect the problems of the genesis of Early Christian church building under Constantine and the variations of that type. The Lateran basilica in particular holds a central place in the history of Early Christian architecture, both in Rome and throughout Christendom. It was the first monumental Christian assembly hall built under the highest state patronage. As it was the seat of the Bishop of Rome and was erected through the personal intervention of the Emperor, its form could not but be influential on subsequent structures in the old capital. Similarly St. Peter's, the first church in the West to enclose the body of a martyr and the founder of the Church of Rome at that, was bound to occupy an exemplary position for later ecclesiastical architecture S. Paolo, finally, represents a critical consolidation of the type (pl. VIII).

The Lateran and the Vatican basilicas were part of a building boom in Rome initiated by Diocletian and Maximian for economic and political purposes and continued by Maxentius and Constantine. With the exception of Maxentius's novel adoption of the form of a thermal hall for a forensic basilica, the early fourth century buildings adhere to their general and even specific historical prototypes. Indeed, the Curia Senatus, the Basilica Julia and the temple of Venus and Rome were replacements of their fire-damaged predecessors that apparently conformed to the structures they replaced. And although the two Christian basilicas were novelties as Christian structures, they conform generally to the building techniques locally customary and fit into the broader category of Roman basilicas. The social function and position of the Lateran and St. Peter's could not be deduced from their structural technology. To be sure, they do not exhibit the sovereign command of vaulting so recently demonstrated in the Baths of Diocletian and the Basilica of Maxentius. Other reasons aside, the massive internal supports required of a monumental vaulted building might have interfered with the needs of a large hall of Christian worship in the early fourth century. The same masonry construction in *opus caementicium* displayed in the baths and the civil basilica, however, is amply demonstrated in the foundations and substructures of both churches and in particular in St. Peter's, whose foundation walls were subject not only to vertical loading, but also to a potential hydrostatic pressure. The drainage holes at the bases of the foundations are evidence of the builders' awareness of the problem.

In the erection of the superstructure there is ample evidence in all three churches that the builders were aware of the difficulties in supporting a soaring basilica either on architraves or on arcades borne on colonnades. This is evident in the relieving arches built into the clerestory walls at S. Paolo (figs. 131, 135, 141) which in all likelihood existed also at St. Peter's and at the Lateran. It is equally shown by the arched openings in the walls above the inner aisles in all three churches, whether inside and thus under the roof as at S. Paolo and St. Peter's (figs. 91, 142a, 143, 198, 206) or rising above as lunette windows as presumably at the Lateran (figs. 77, 80). The use of such relieving openings above an inner aisle arcade need not have been limited to Rome; a similar feature occurs in the inner partition of the Great Mosque at Damascus. Of exceptional interest is the thinness of the clerestory wall of St. Peter's, 90 cm. That this narrow wall was the result of a desire to minimize the loads borne by the nave

colonnades is suggested by a comparison of the wall with those of the Tetrarchical Curia Senatus whose wooden roof was supported on solid walls resting directly on foundations.

	Curia Senatus	St. Peter's
roof span	17.75 m.[1]	25.75 m.[2]
wall height	23.40 m.	32.17 m.
wall thickness	1.35 m.	0.90 m.

That the reduction was too great for complete lateral stability is illustrated in Antonio da Sangallo's section of the nave (fig. 196).

S. Paolo's single technical peculiarity, insofar as it can today be determined, is the nave arcade in travertine *opus quadratum* (fig. 141), a technique of progressive rarity in the Roman Imperial period[3]. The reasons elude us, but the choice of travertine may have been dictated by decorative as well as structural considerations, as witness the use of imitation *opus quadratum* in the spandrel zone in late fourth and early fifth century buildings[4].

The genesis of the basilica as the leading form of monumental halls laid out for Christian worship in the fourth and fifth centuries has been for long a subject of scholarly debate. The nature and complexity of this problem, however, was vastly exaggerated in the past. As we see it today, it may be reduced to the creation of a new variant in both function and design within a genus long established and, by *ca.* 300 A. D., undergoing a process of renewal. For many centuries basilicas had been traditional in Roman public architecture, with many variants in both function and design. Basically halls for large gatherings, they had served for town meetings or law sessions; as military drill halls; as bazaars; as lobbies attached to temples or theatres; as reception and audience halls incorporated into wealthy mansions and imperial palaces[5]. Frequently, they had religious overtones. In plan and design they were single-naved halls with or without apses: halls composed of a nave and aisles, the latter single or double and parallel to or enveloping the nave; with or without galleries above the aisles; with entrances on one of the long sides, intimating a transversal or central reading of the plan, or on one short side, stressing the longitudinal axis, or on both one long and one short side; with tribunals or apses pulled inside or extending outward from one, two or three flanks; with nave and aisles of one height or with a higher nave and clerestory; and with a timber roof, vaulting being a rare exception. Contrary to other Roman building types, basilicas showed and retained a remarkable flexibility. Indeed, around 300 A. D. the type underwent a process of break-up, revitalization and renewal: the basilica of Maxentius adopted the plan and design of a vaulted thermae hall; while both for audience halls, such as the basilica in Trier, as well as for judiciary and market basilicas, the single-naved, timber-roofed longitudinal plan more and more prevailed. Simultaneously the religious connotations always present were increasingly stressed.

It is within this context that the genesis of the Christian basilica must be seen. The essential neutrality of its plan and function and the adaptability of the Roman basilica account for its acceptance by Christian congregations for divine services. The concept of Christ's kingship, the hierarchical organization of the clergy (resembling in its *cursus honorum* that of the state) and the congregational character of Christian worship and its liturgy were all elements which recommended the basilica as an appropriate and convenient form for the Church. Based

[1] Bartoli, *Curia Senatus*, Rome, 1963, 38, 51; wall thickness scaled from pl. LXXXII.

[2] At the clerestory.

[3] Lugli, *La tecnica edilizia romana*, Bari, 1957, vol. I, 331 ff.

[4] Becatti, *Ostia VI: edificio con opus sectile fuori Porta Marina*, Rome, 1967, 103 ff.; above, Vol. IV, 89 (S. Sabina).

[5] Ward-Perkins, «Constantine and the origins of the Christian basilica», *P.B.S.R.* XXII, 1954, 69 ff.; Krautheimer, «The Constantinian basilica», *Dumbarton Oaks Papers*, XXI, 1967, 115 ff.

both on these premises and on practical factors, the first Christian basilicas had certain elements in common: they were longitudinal in plan, to focus attention on the sacrifice of the Eucharist at the altar and to provide a processional path for the clergy's entrance — as witness the *solea* at the Lateran; they were terminated by an apse to seat the bishop and clergy; they were timber-roofed; and given the roofing problem, the space had to be extended sideways for large congregations, resulting in the addition to the nave of two or four aisles. The latter implied fusing the longitudinal plan with the centralized type of multi-aisled columnar market basilicas, such as the basilica Aemilia, the Julia and the Ulpia, by 300 A. D. still the most monumental, if old-fashioned, "secular" basilicas in Rome. The resulting barnlike form of the Lateran and St. Peter's was mitigated only by the abundant fenestration proposed in our reconstructions, the quality of the marble columns supporting the superstructure, and the richness of the liturgical furniture and lighting fixtures, as listed in imperial donations. The great number of windows conformed to the increasing preference for natural illumination in late antique architecture[1]. At the same time, it continued a pattern of fenestration, which, since the basilica in Pompeii, had made this architectural type the best illuminated and ventilated of Roman structures. The re-use of column shafts, bases, capitals and architraves was standard Roman practice already prior to the time of Constantine. The marble pavement and the traces of revetment on the intradosses and spandrels of the minor arcades in the Lateran and presumably the coffered, gilded ceiling in St. Peter's and the gilding of the apse vault in both churches provide evidence, if incomplete, for the character and extent of interior decoration. The gorgeous display of fittings in precious metals and of lighting fixtures, with hundreds of lights flickering at night services, must have formed a counterpart to the strong natural illumination by day.

Variants were forced on this overall type of the Constantinian basilica by a number of factors. Local tradition in building techniques determined the use in Rome of strong *opus caementicium* for the foundation walls, faced in brick or *opus listatum* in their upper portions and in the walls above ground. Liturgical custom, likewise traditional locally, accounted for variations in plan. Similarly, different ecclesiastical functions required variations in the layout; the Lateran basilica, designed for the regular services of a resident congregation, differed from St. Peter's, which was laid out to house the tomb of the Apostle, to serve as a burial ground and for occasional services attended by large numbers of pilgrims drawn from Rome and elsewhere. Other variations are represented by S. Croce, remodelled as a palace church; or again by the covered cemeteries outside the Walls, such as S. Agnese, S. Lorenzo, SS. Marcellino e Pietro and S. Sebastiano[2].

Clearly, Constantine's architects had to experiment within the overall limits of the type and to adapt it to suit specific functional and liturgical requirements. The alterations to the standard plan were strikingly few and simple. Galleries, frequent in secular basilicas as well as in Christian basilicas both in the East and in North Africa, were apparently considered unnecessary in Constantinian Rome. At the Lateran, small wing chambers, aisle-transepts, were added at the western end of the structure extending sideways from what appears to have been the chancel area. Possibly they served as depositories for the offerings of the congregation, but this is only a hypothesis. At St. Peter's the main body of the church appears as an

[1] Günter, *Wand, Fenster und Licht in der Trierer Palastaula und in spätantiken Bauten*, Herford, 1968.

[2] Krautheimer, « Mensa-coementerium-Martyrium », *Cahiers Archéologiques*, XI, (1960), 15 ff.; for S. Agnese, Deichmann, « Die Lage der Konstantinischen Basilika der heiligen Agnes... », *RAC*, 22 (1946) 1 ff.; for S. Croce, above, Vol. I, 165 ff.; for S. Lorenzo f. l. m., above, Vol. II, 1 ff.; for SS. Marcellino e Pietro, Deichmann and Tschira, « Das Mausoleum der Kaiserin Helena... », *Jbch. Dtsch. Arch. Inst.*, 72 (1957) 44 ff. and above, Vol. II, 191 ff.; for S. Sebastiano, above, Vol. IV, 99 ff.

enlargement in the ratio of 6:5 of the Lateran nave and aisles. The principal innovations occurred at either end of the nave. The Shrine of the Apostle, the focus and *raison d'être* of the building, rose on the chord of the apse. A transverse hall was interposed between the nave and the apse, marked by its extreme simplicity and the directness of its junction with the nave through a triumphal arch, the first known in Christian architecture. The transept, while on the same level, was considerably lower than the nave. At its short ends projected exedrae, which were even lower and were separated from the transept area by columnar screens. Their function remains as enigmatic as that of the Lateran aisle-transept, from which they seem to be derived. The atrium at the east end of St. Peter's represents another innovation with regard to the Lateran. Planned from the beginning and apparently part of the original building campaign, it seems to have been provided with a full-fledged quadriporticus only around 500. Hence its original form, while hypothetical in some respects, differs from forecourts surrounded by a quadriporticus, frequent in Roman secular and palace architecture, and from comparable full-fledged atria in church building, beginning with Tyre built presumably in 316-17 [1]. The adoption of a forecourt, though without quadriporticus, at the Vatican and at other covered cemeteries of Constantinian foundation outside the Walls of Rome [2] is perhaps to be associated with their function as funerary basilicas and as the foci of pilgrimages.

S. Paolo f. l. m., laid out sixty or seventy years after the Lateran and St. Peter's, was no longer experimental. The paramount criterion in its design was clearly the intention to achieve an architectural parity between it and St. Peter's. Conditions of terrain presented no difficulties. A broad, level plain sufficiently ample to receive the large new structure stretched westward from the initial shrine and its earlier architectural setting.

The plans of the two churches and a comparison of their dimensions presented in our tabulation and on pl. VIII demonstrate the dependence of the Theodosian basilica of S. Paolo on St. Peter's [3]. On a modulus of 40 rather than 30 R. ft. it takes up the scheme of a five-aisled nave and a terminal transept and apse. The atrium of S. Paolo is even less certain in detail than that of St. Peter's. Since Leo the Great restored the fountain in the atrium of S. Paolo, the latter may well have achieved its ultimate form much earlier than did that of the Vatican basilica. With the contemporary atrium of S. Clemente, it would seem to be the first of its kind known to us in Rome.

Theodosian S. Paolo was not, however, a mechanical repetition of St. Peter's. Its departures from its exemplar demonstrate that the plan of the latter was subjected to a thorough critique by the authorities responsible for planning S. Paolo. The Shrine of the Apostle was placed right behind the triumphal arch, as close as possible to the congregation assembled in the nave, thus making the locus of veneration more accessible visibly and physically to the faithful, while at the same time it eliminated any excuse for their entering the transept. In a seeming paradox, although the *confessio* was removed from it, the apse of S. Paolo was larger than that of St. Peter's by no less than 20 R. ft. Likewise, the transept was deeper. The enlargement of both apse and transept may suggest that the increase in the number of clergy had rendered the apse and transept of St. Peter's uncomfortably exiguous. Exedrae, as they appeared at St. Peter's, had been eliminated, presumably as no longer fulfilling a liturgical function. Likewise the screening columns at the junction of the side aisles and the transept of St. Peter's were omitted; at S. Paolo the two elements were linked only by large, simple semicircular arches.

[1] EUSEBIUS, *The Ecclesiastical History* (Loeb Classical Library) X, iv, 39 f.
[2] ALEXANDER, «Studies in Constantinian church architecture», *RAC* 47 (1971) 281 ff. and 49 (1973) 23 ff.
[3] Below, 285 f.
[4] Above, Vol. I, 117 ff., esp. 132.

The naves of the two basilicas differed significantly only in their superstructures. The nave at S. Paolo, with its four aisles, corresponded in overall design to those at the Lateran and St. Peter's, but, rather than resting on a trabeated colonnade, it was carried by arcades, as they had become customary in Roman church building in the fourth century, as witness S. Sebastiano, S. Clemente and, contemporary with S. Paolo, S. Pietro in Vincoli [1]. Perhaps the most important change in the appearance of the nave to the ordinary visitor was the greatly increased level of illumination produced by the doubling of the number of windows in the clerestory [2]. Its brilliance brought the Theodosian nave into line with other Roman basilicas of the late fourth century. Indeed, S. Paolo's may have set the standard followed in SS. Giovanni e Paolo, S. Vitale, S. Sabina, and S. Maria Maggiore [3].

The superstructure of the transept of S. Paolo differed even more markedly from that of St. Peter's than did its nave. The change in the proportion of its rectangular plan from 2:7 to 1:3 produced a more balanced and monumental space. Its monumentality was heightened by the enlargement of the apse, which fused its space more firmly with that of the transept. This union was further enhanced by the omission of windows in the apse, which was thus dependent on the transept for illumination, where the fenestration was increased. The latter probably comprised eighteen large arched windows and fourteen oculi. The latter, possibly an innovation at S. Paolo, were subsequently taken up in the clerestory of SS. Giovanni e Paolo and in the façade of the first state of S. Pietro in Vincoli [4]. Internally the oculi in the transept not only increased the level of illumination, important as that was; they also created an atectonic, somewhat pictorial pattern of fenestration previously undocumented in Roman Imperial or Christian architecture. An analogous effect must have been created on the exterior where the curvilinear elements of the two types of windows and of corresponding relieving arches on the western face of the transept interlock in a decorative surface pattern that sets the transept apart from the more conventional nave with its simple row of clerestory windows.

In sum, one may say that the programmatic authority of St. Peter's over the design of S. Paolo was questioned and modified in response to an analysis of the functional efficiency of the Constantinian basilica, as it performed over a number of decades; and, in the superstructure, in response to a changing aesthetic that, on the one hand, placed a greater premium on a unity of material and decorative design and, on the other, on a greater richness and even fancifulness in the intensity and pattern of illumination. A standard type had been developed and it was this type which was taken up both in Rome and beyond the Alps in Carolingian times and again in the eleventh and twelfth centuries, with but an occasional element taken from St. Peter's, such as architraves in the nave; this notwithstanding the higher place of importance held by St. Peter's in medieval thought. It seems as though the normalized type evolved at S. Paolo, with its fully developed atrium and its high and deep transept, as well as the insertion under Leo the Great of columns supporting the triumphal arch, became a common exemplar for later Roman church building. In the imagination of later generations, it was superimposed on the all too experimental models of the Lateran and St. Peter's.

[1] For S. Sebastiano, above, Vol. IV, 99 ff.; for S. Clemente, Vol. I, 117 ff.; for S. Pietro in Vincoli, Vol. III, 224 ff.
[2] GÜNTER, *op. cit.*, 114, *passim*.
[3] For SS. Giovanni e Paolo, above, Vol. I, 285 ff.; for S. Vitale, Vol. IV, 313 ff.; for S. Sabina, Vol. IV, 72 ff.; for S. Pietro in Vincoli, *loc. cit.*; for S. Maria Maggiore, Vol. III, 50 ff.
[4] SS. Giovanni e Paolo, above, *loc. cit.*; S. Pietro in Vincoli, above, *loc. cit.*

Comparative Dimensions of the Lateran Basilica, St. Peter's and S. Paolo f. l. m. in R. ft.
(pl. VIII)

	LATERAN			*ST. PETER'S*			*S. PAOLO f. l. m.*		
	in foundations	above ground actual	above ground ideal	in foundations	above ground actual	above ground ideal	in foundations	above ground actual	above ground ideal
Total length, including apse	333 1/3				403 1/3			434 1/6*	
Total length, excluding apse	303 2/3	305	300		370 1/3			391 7/12	400
Diameter of apse		53			60			84	80
Depth of apse	30				33			42	
Height of apse			62 1/2		75 2/3	75		78 2/3	80
Chord wall of apse	3			7 1/2					
Apse wall	8			5 2/3					
Length of nave	303 2/3				307	300		303 1/3	300
Total width of nave and aisles		178 2/3	180		215	210		220	220
Nave width clear		63 1/2			80			82	80
Height to roof beams			ca. 90		110			104	100
Height to apex of roof					125 1/2			123	
Height to architrave or arcade			ca. 38		37 1/3			35	
Height to window sill			65		80			80	
Length of inner aisles	303 2/3				307			303 1/3	300
Width of inner aisles		27 1/2		25 1/2		30		30	
Height of inner aisles			50+					45	
Outer aisles, length					307			303 1/3	300
Outer aisles, width		26		25 1/2				30	
Outer aisles, height		30						40	
Combined width of aisles		55		60				ca. 62	
Transept width					225			240 clear	
Transept width including exedrae and their walls					307 2/3				
Transept depth						60		82	
Transept height								91	
Exedrae/aisle-transept length	37		39						
Exedrae/aisle-transept depth	27 3/4		30			40			
Transept end wall					5			6 1/4	
Windows, height					16 2/3			16 1/2**	
Windows, width					11			8 1/4	
Windows, distances		9/10 (nave) 12 (aisles)			12 1/3			6 (nave) 3 (aisles)	
Thickness of walls:									
nave	5 2/3		9	7 (6 2/3)	5		6	3 3/4	
aisles				9			4	6 1/2	
intermediary	5 2/3			9		9	4		
Atrium, length				307 2/3				200	
Atrium, width				214 2/3				226	
Atrium porticoes, width				30 2/3	30			24 1/2	

* This figure, derived from Letarouilly's metric dimension, differs slightly from the total length arrived at incrementally, 433 7/12 R. ft.

** In clerestory.

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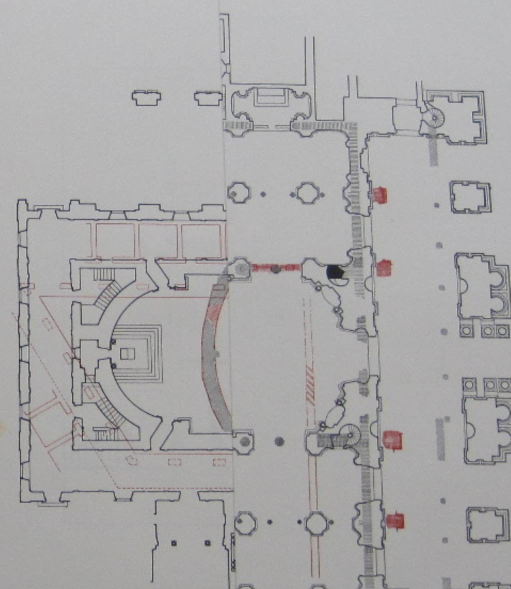
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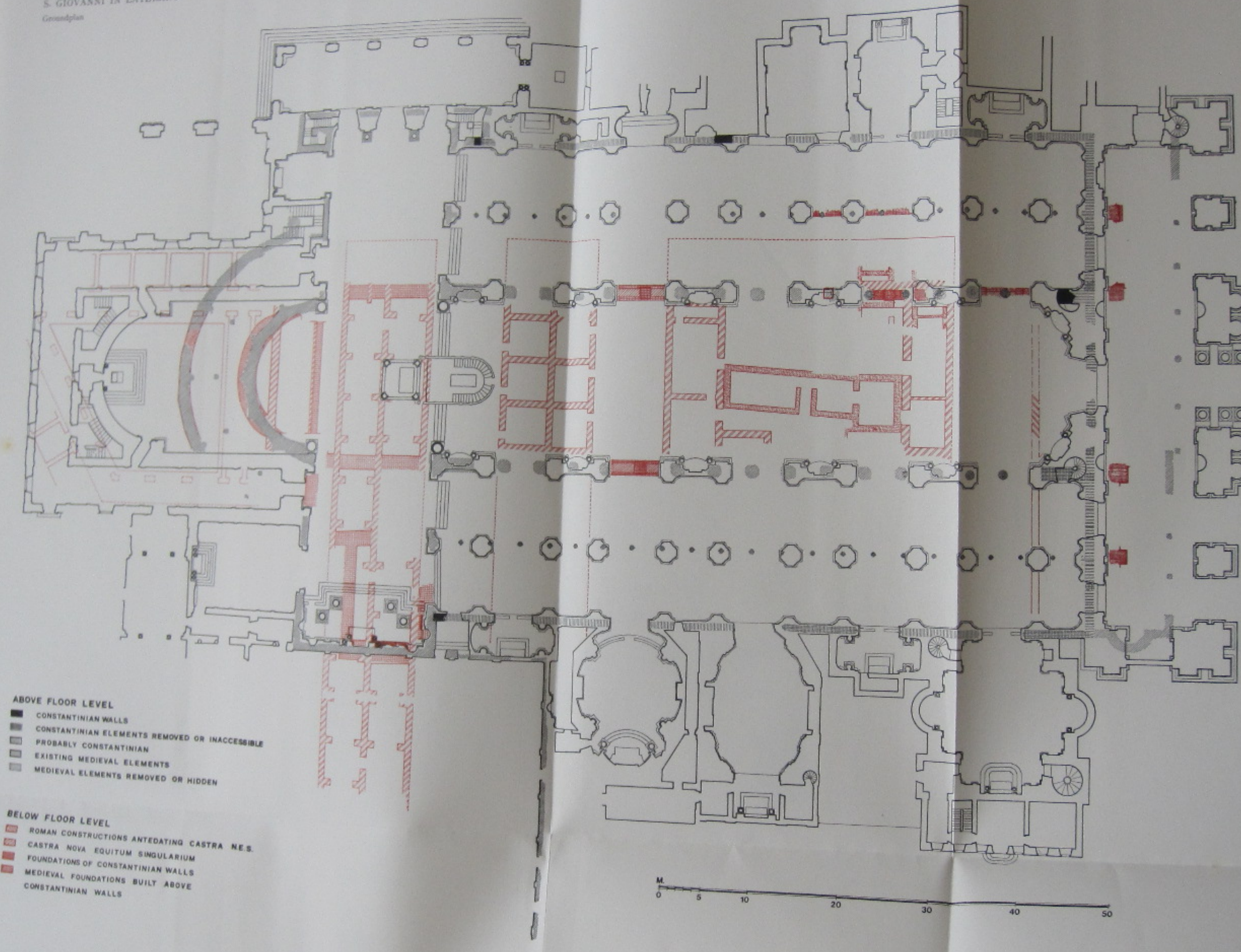
Groundplan

PLATE I



S. GIOVANNI IN LATERANO

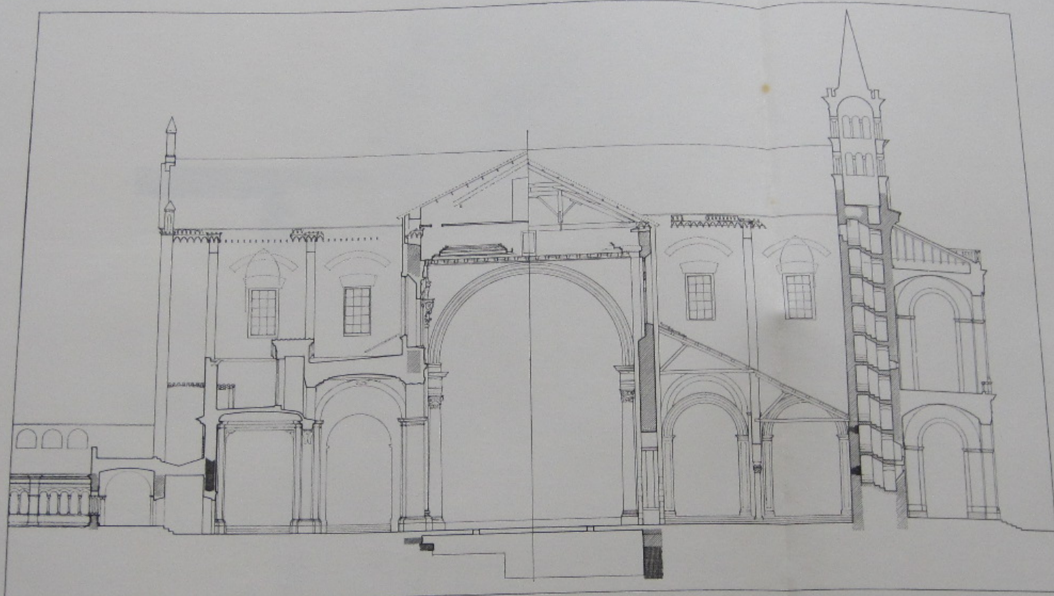
Groundplan



Survey and drawing, S. Corbett.
Drawing revised, M. Martelloni.

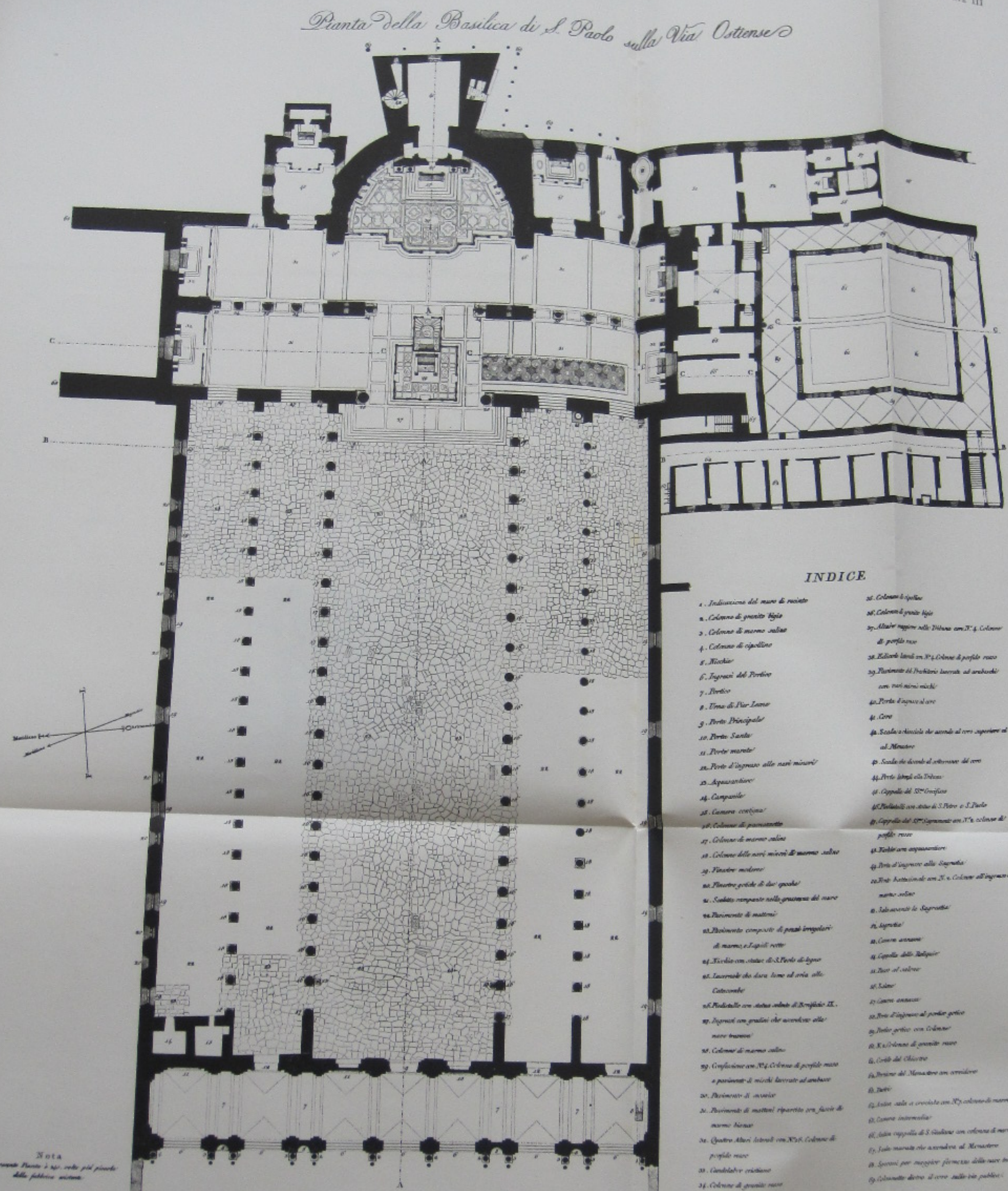
S. GIOVANNI IN LATERANO

Transverse section of nave, left half as at present, right half as prior to 1646.



Survey and drawing, S. CORBETT.

S. PAOLO FUORI LE MURA
Groundplan as of 1815.



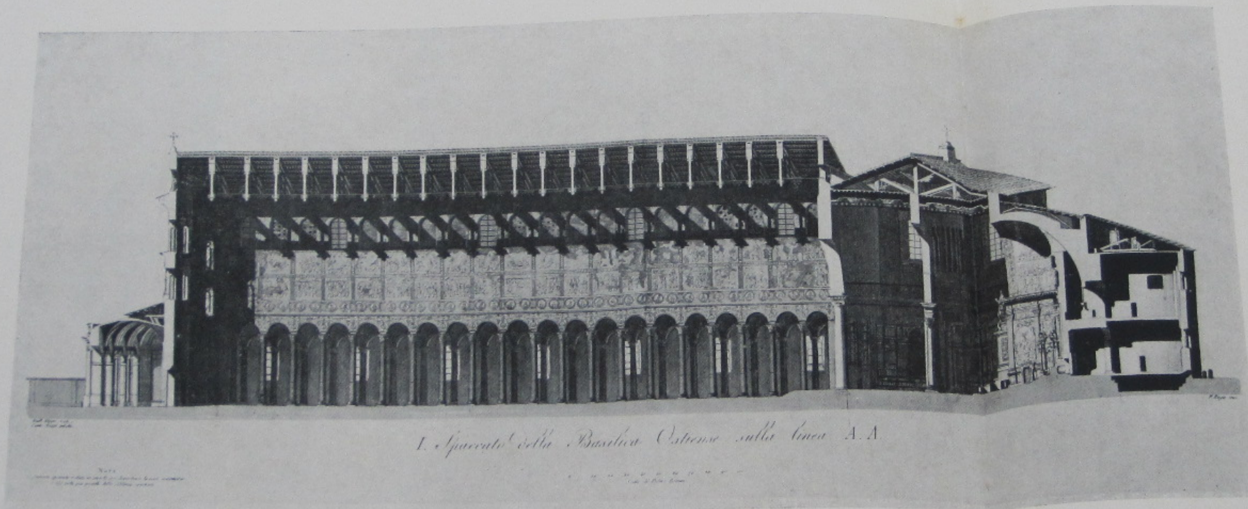
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42. Scala a chiocciola che ascende al coro superiore ed al Monastero
43. Scala che discende al sotterraneo del coro
44. Porte laterali alla Tribuna
45. Cappella del SS.mo Crocifisso
46. Piedistalli con statue di S. Pietro e S. Paolo
47. Cappella del SS.mo Sagramento con N.° 2. colonne di porfido rosso
48. Nicchie con acquasantiere
49. Porta d'ingresso alla Sagrestia
50. Fonte battesimale con N.° 2. Colonne all'ingresso di marmo salino
51. Sala avanti la Sagrestia
52. Sagrestia
53. Camera annessa
54. Cappella delle Reliquie
55. Passo al salone
56. Salone
57. Camera annessa
58. Porta d'ingresso al portico gotico
59. Portico gotico con Colonne
60. N. 2 Colonne di granito rosso
61. Cortile del Chiostro
62. Porzione del Monastero con corridore
63. [illegible]
64. Antica sala a crociata con N.° 7. colonne di marmo salino
65. Camera intermedia
66. Antica cappella di S. Giuliano con colonna di marmo salino
67. Scala murata che ascendeva al Monastero
68. Speroni per maggior fermezza della nave traversa
69. Colonnette dietro il coro sulla via publica

Survey and drawing, A. ALIPPI.

S. PAOLO FUORI LE MURA

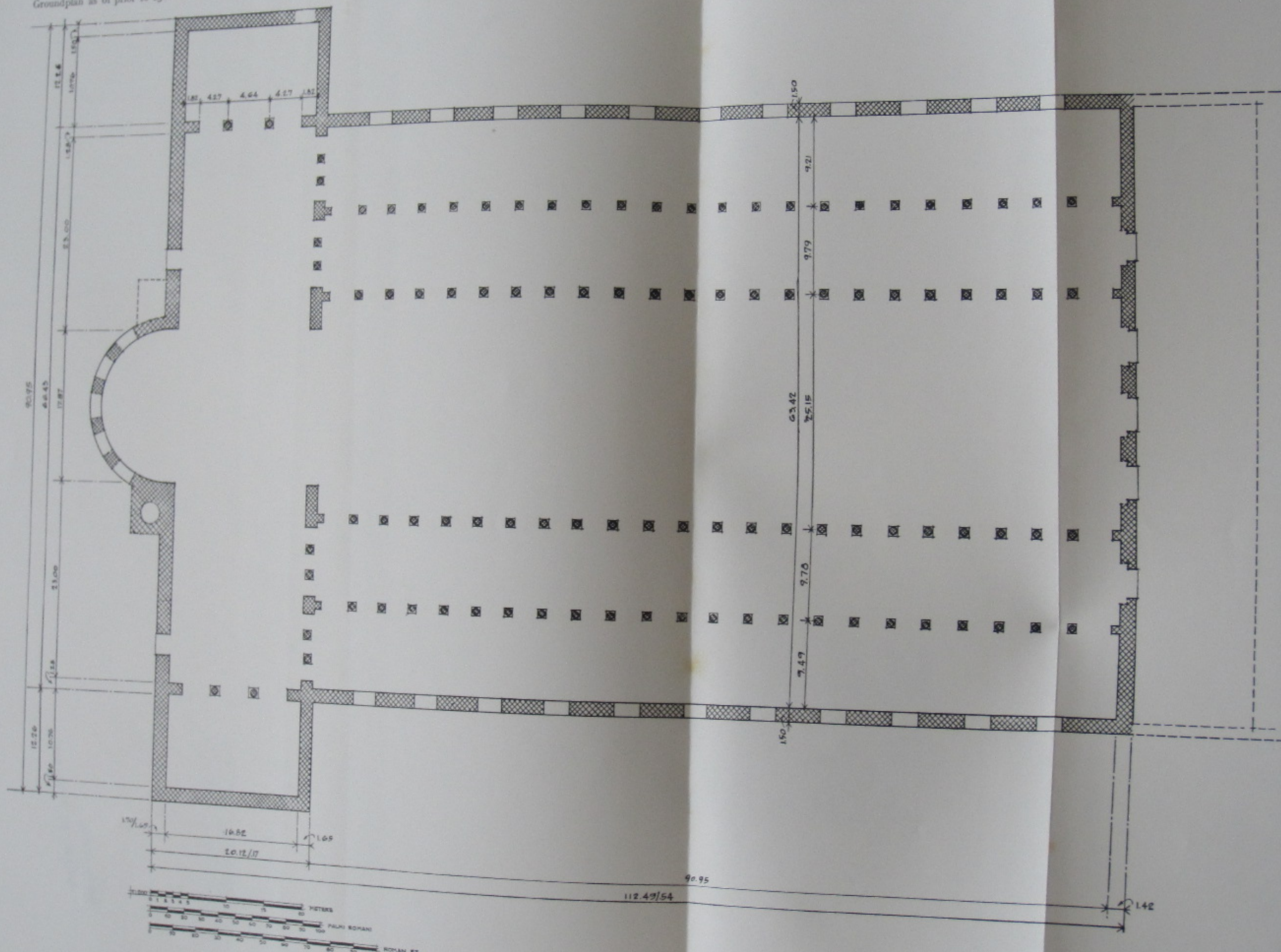
Longitudinal section as of 1815.



Survey and drawing, A. ALIPPI.

S. PIETRO IN VATICANO

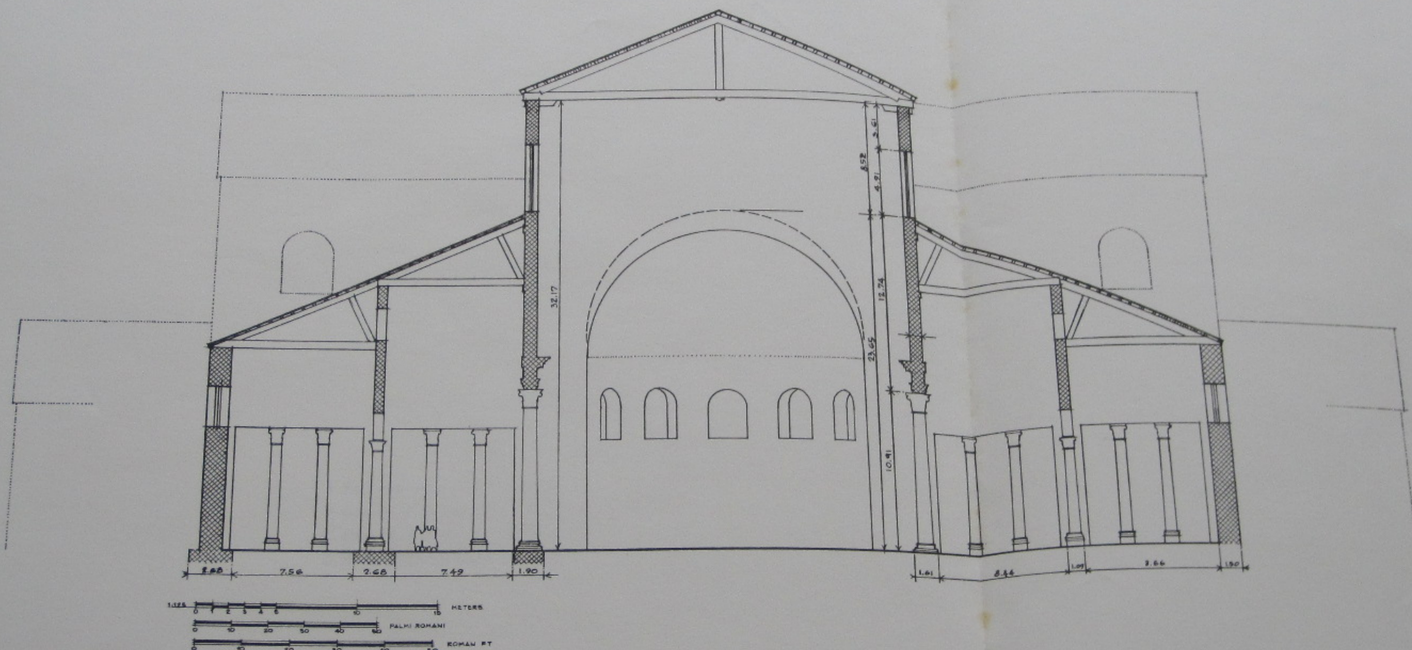
Groundplan as of prior to 1506.



S. PIETRO IN VATICANO

Transverse section of nave, as of prior to 1506.

PLATE VI



Reconstruction and drawing, ALFRED K. FRAZER.

S. PIETRO IN VATICANO

Profiles of bases.

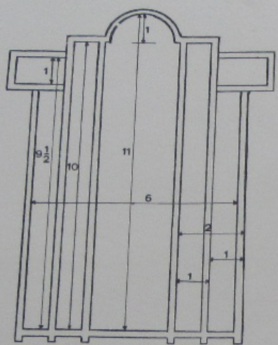
PLATE VII



A Eleventh column, north aisle
B Column of screen, north Exedra
C Base I from nave, fourth century
D Base II from nave, fourth century

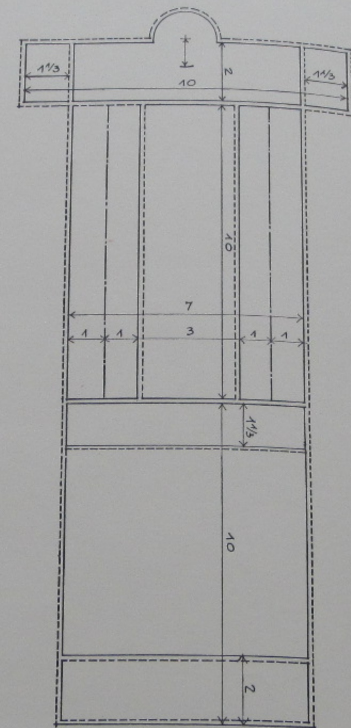
Survey and drawing, ALFRED K. FRAZER.

S. GIOVANNI IN LATERANO,
S. PIETRO IN VATICANO,
S. PAOLO FUORI LE MURA,
Modular plans.



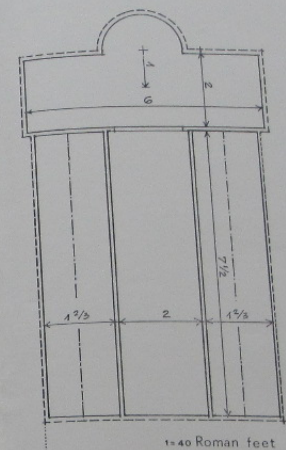
1 = 30 Roman feet

S. GIOVANNI IN LATERANO



1 = 30 Roman feet

ST. PETER'S



1 = 40 Roman feet

S. PAOLO fuori le mura

Drawings. ALFRED K. FRAZER.

CORRIGENDA ET ADDENDA

p. IX, 1. 16:	J.S.H.A., read: J.S.A.H.
p. 1, 1. 21:	DE FLEURY, read: ROHAULT DE FLEURY
p. 7, 1. 13:	*Romani,*; 17, read: *Romani*, 17
p. 12, 1. 29:	*ex jaspide labefactae...* », add: (ROHAULT DE FLEURY, *Latran*, 489 f.)
p. 25, note 1:	*R. Q. Schr.* (1976) in press, read: « Convenerunt in domum Faustae in Lateranum... », *R. Q. Schr.* 71 (1976) 1 ff.
p. 68, note 3:	*De praecipuis, basilicis*, read: *De praecipuis basilicis*
p. 88, note 3:	to have supported the canopy. Add: Her reconstruction proposal supported by new evidence is to apper in *R. Q. Schr.* (1977) and we are most grateful for her permission to peruse it in manuscript. Since by then our text was printed we can only mention two salient points: she views the four bronze columns as having carried the *fastigium;* and, contrary to our proposal, she assumes these columns to have stood, rather than on the apse chord, already from the ninth century on in front of the High Altar.
p. 120, fig. 106:	late fourth century, read: mid-fifth century (?)
p. 125, fig. 117:	T ransept, read: Transept
p. 136, fig. 127:	*ca.* 1645, read: *ca.* 1645 (?)
p. 186, fig. 152:	add: seen from south
p. 187, fig. 153:	add: seen from south
p. 188, line 14 from foot:	R., add: (fig. 149)
p. 195, 1. 10:	(fig 168, q - q[1]), read: (fig. 168)
p. 228, 1. 3:	drawing, read: etching
p. 246, note 5:	BANNTSIER, read: BANNISTER
p. 269, note 6:	*Roemishes*, read: *Roemisches*
p. 272, 1. 9:	in unkonown, read: is unknown
p. 282, note 4:	*Ostia* VI, read: *Scavi di Ostia* VI